## PLEASE REFER TO FILE FOLDER NO. 9

# FOR THE CONTINUATION OF THIS WATER RIGHT FILE

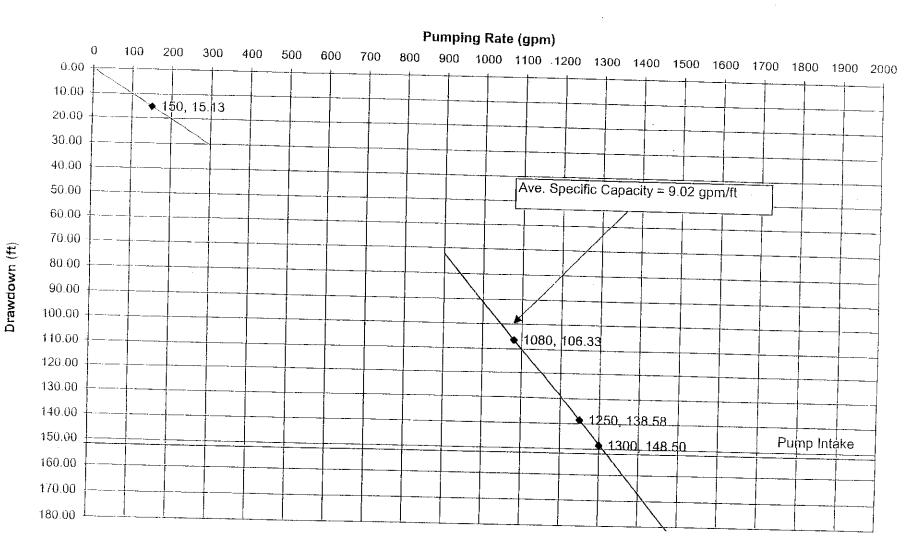
No. 63-32089

Form 238-7 IDAHO DEPARTM IT OF WATER RESC	
WELL L LLEK'S REPOR	Inspected by TwpSec
1. WELLTAG NO. D 004/980	1/41/4
DRILLING PERMIT NO. <u>890994 - 835987</u> Water Right or Injection Well No. <u>63-32089 - 63-3209</u> 0	12. WELL TESTS: Lat: : Long: : :
YVALE! HIGHE OF THE PARTY OF TH	Partonia Davies Davie Dispansi Surgaria
2. OWNER:	Yeld gel./min. Drawdown Pumping Laves Time  /300 opm /49 /35
Name CITY of EAGLE	1300 gpm 149. 135. 4 12 ses
Address P. O. BOX 1520  City EAGLE State ID ZID 83616	
;	Water Temp Bottom hole temp.
3. LOCATION OF WELL by legal description: LEGACY WELL #1. You must provide address or Lot, Blk, Sub, or Directions to well.	Water Quality test or comments:  Depth first Water Encounter
Twp.   North   or Bouth   Rge.   East   or West	13. LITHOLOGIC LOG: (Describe repairs or abandonment) Water
Sen. //: 1/4 SE 1/4 NW1/4	Both From To Remarks: Lithology, Water Quality & Temperature: Y N
Gov't Lot County A > Spanner 100 never	019.
Lat: : ' : Long: : :	24 0 4 709 SOIL
Address of Well Site QUARTER CIPCLE AT RANCH, WEST	1 4 1 CLAU
OF EAGLE COAD City EAGLE	11 28 SAND, RIVER GRAVELS
L1. Blk. Sub. Name	28 60 BEN CLAY
	60 63 SAND
4 HOP.	63 72 BEN CLAY
4. USE: ¡ ☐ Domestic ☐ Municipal ☐ Monitor ☐ Irrigation	73 93 SAND
Thermal Injection Vother 72	92 94 BRN CLAU
	94 166 SAND 4/BEN CLAY STREAMS
5. TYPE OF WORK check all that apply (Replacement etc.)	166174 CLAY
New Welf; ☐ Modify ☐ Abandonment ☐ Other	174 178 SANS
6. DRILL METHOD:	178 181 CLAU
☐ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other REVELSE	181 183 SAND CLAY STREAKS
· · · · · · · · · · · · · · · · · · ·	257 264 CLD 4
7. SEALINGIPROCEDURES	264 274 SANK W/CLAU STRIAKS
CEMENT GROUT 0 278 24 USA PURPED BOTTON TOTO	I I I I I I I I I I I I I I I I I I I
CEMENT GROUT 0 273 24 GEN PLINDED POTTOR TOTAL BENTON ITE 360 405 12,000 DEG POUR	V 353 340 BLUE CLAU
Was drive shots used?	SECO 384 BLUE CLOS
Was drive shoe seal tested? DY N How?	30 384 387 SAND
	387 419 BILLE - GRAY CLAY
8. CASING/INER: /6" Y /2" REDUCER @ /80" TD /81"  Diameter Profit To Gaugn Malerial Casing Liner Wedded Threaded	419 444 SAND
Diameter Prom To Gaugn Material Calling Liner Western Infeaton	459 493 SAND W/ CLAY LAYERS
12 /8/ 282 375 STELL DO DE D	493 501 BLUE - GRAY CLAY
	SO/ SOS CEMENTED SOND
Length of Headpipe Length of Tallpipe 5	+ 505 573 BULLE -GRAY CLAY
Packer □Y Myn Type	
9. PERFORATIONS/SCHEENS PACKER TYPE	NOTE: BORE HOLE ABANDONDENT
Perforation Method	FROM 4/5' TO S/3' WITH
Screen Type & Method of Installation SOHNSON (LIVES LIXAP	Dein cuttines
From To Stot Size Number Diameter Material Casing Linor	Gompleted Dopth 357 (Measurable)
282 352 -030 /2 3.5.	1 21/2/ 11 12 0/
	Date: Started 1-34-06 Completed 4-17-06
and the second s	14. DRILLER'S CERTIFICATION
10. FILTER PACK Filter Meterial From To (Weight) Volume Fiscement Method	I/We certify that all minimum well construction standards were compiled with at the time the rip was removed.
78-/2 SAND 278 360 24,000 DRU POUR	D. 14 Ac. D. 6 (7) 272
	Company Name TYERSIDE TNC Firm. No. 333
11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:	Principal Driller Date 5-15-0
the bodie ground Artesian pressure 6 th	and
Depth flow encounteredtl. Describe access port or control devices:	Driller or Date Date
FLANGED CAP W/14" PIPE ALUG	Operator 1 / C-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1
	Principal Oriller and Rig Operator Required.
FORWARD WHITE COPY T	Operator I must have algnature of Drillion/Operator II,
, A	and the second of the second o

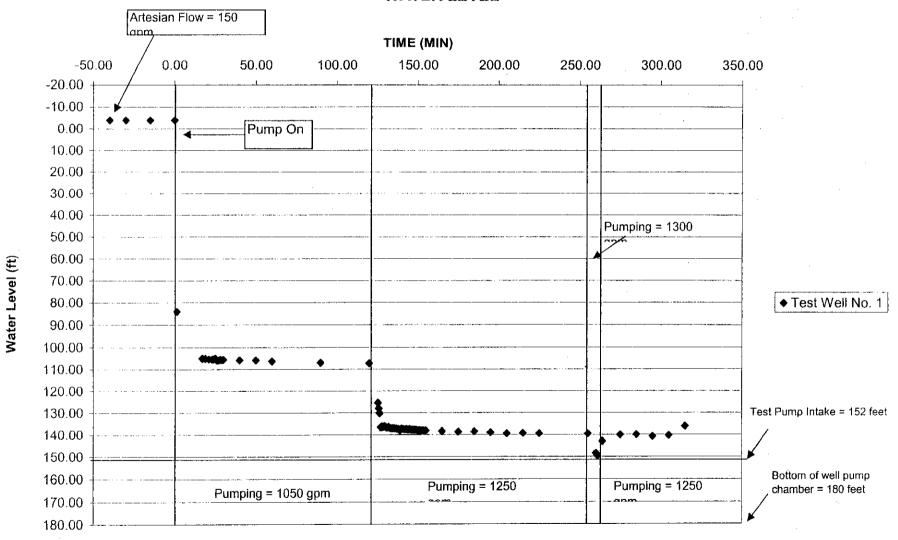
TEST WELL #1

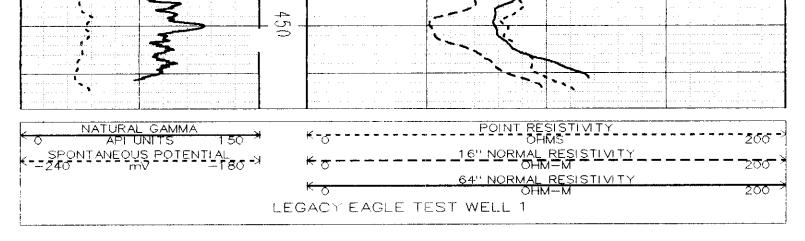
Office Use Only

### STEP PUMP TEST of TEST WELL No.1 (Legacy) March 24th 9:15am to 2:30 pm Specific Capacity



### STEP PUMP TEST of TEST WELL No.1 (Legacy) March 24th 9:15am to 2:30 pm WATER LEVEL





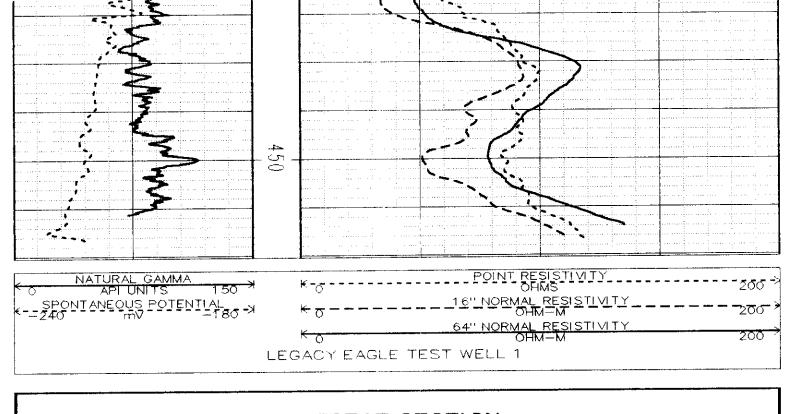
COMPANY RIVERSIDE, INC.

WELL LEGACY EAGLE TEST WELL 1 LOG F.R. 464'

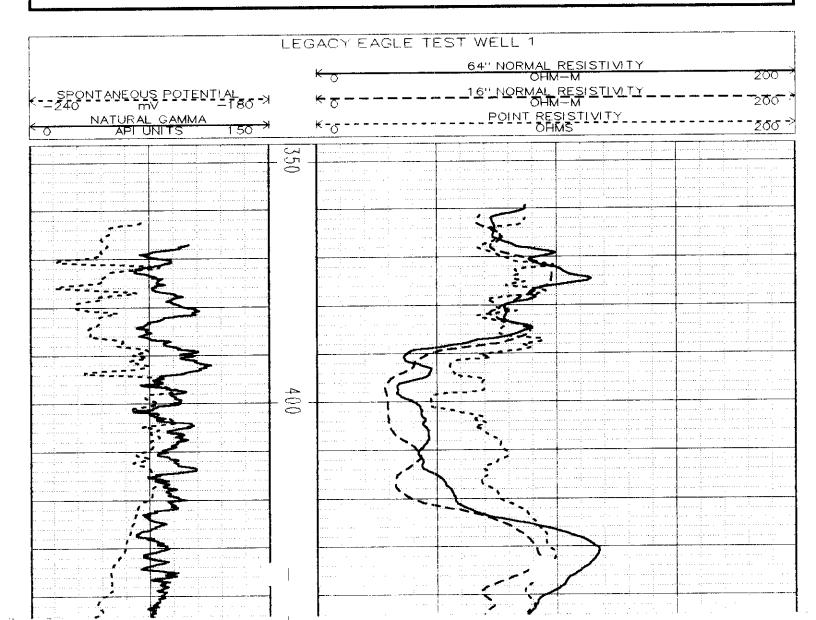
AREA CITY OF EAGLE LOG T.D. 465'

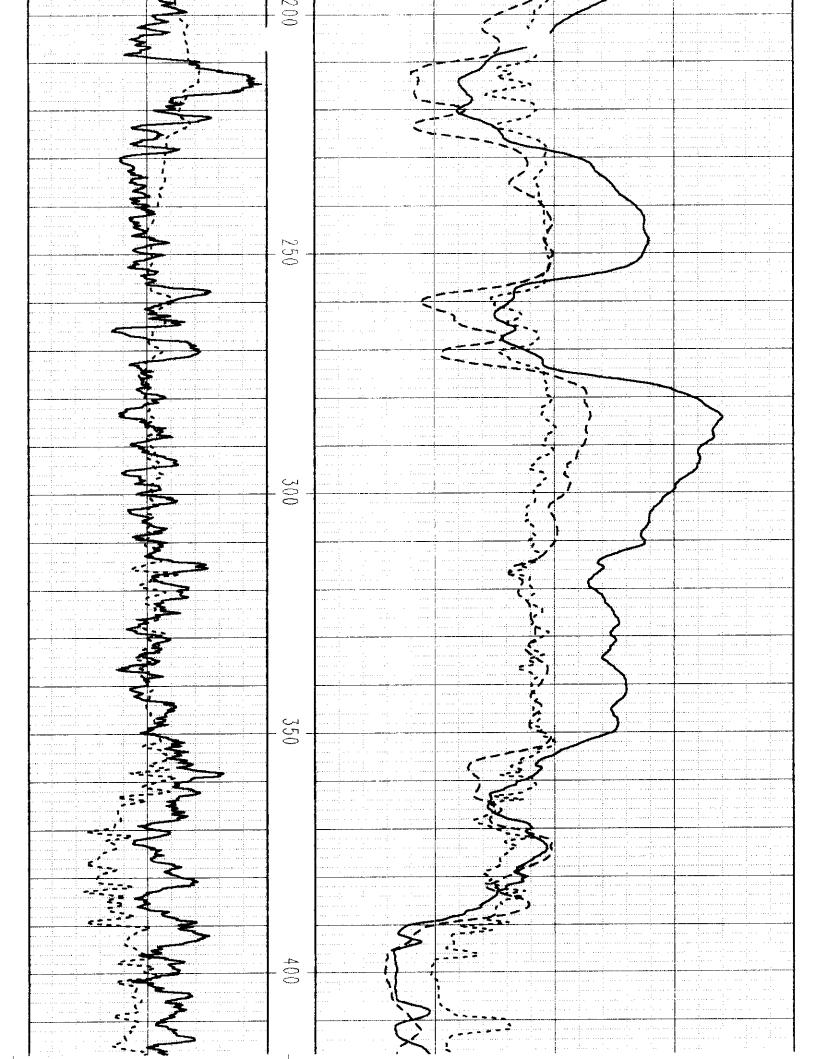
COUNTY ADA ELEVATIONS:

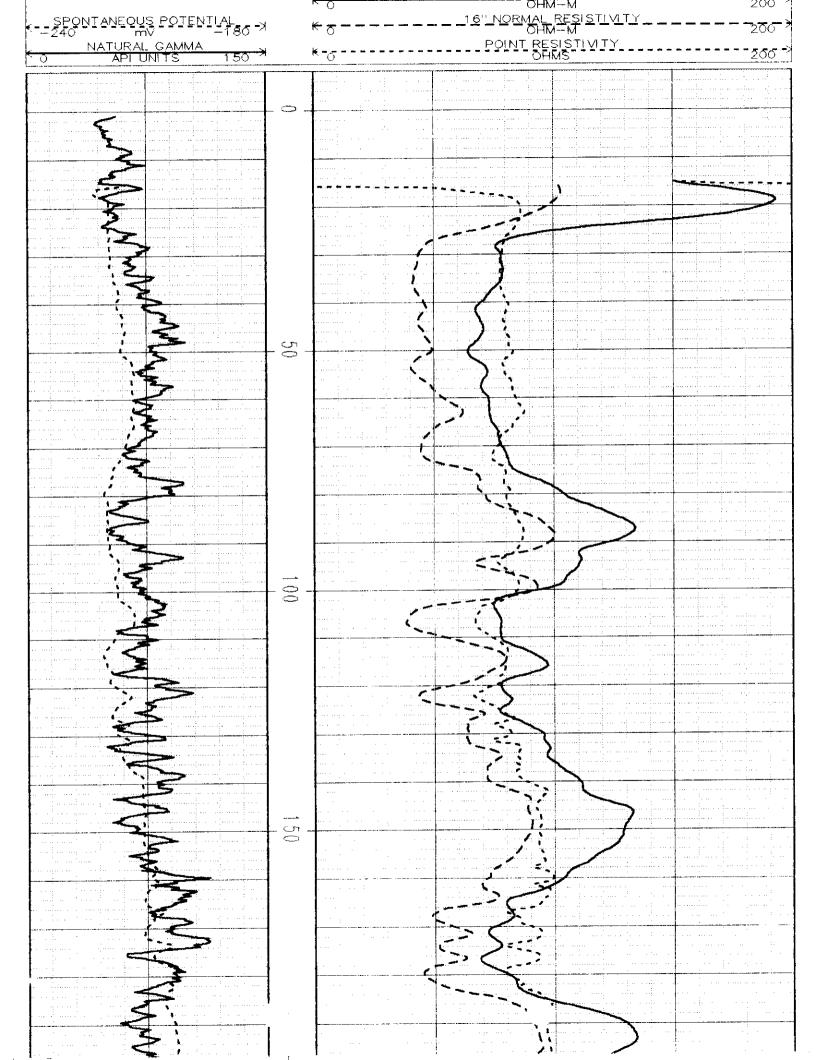
STATE IDAHO G.L. 2520' T.O.C.



### REPEAT SECTION







	ST	RA'	TA
DATA WG			
	DA	TA	INC.

### NATURAL GAMMA/SP 64 INCH NORMAL RESISTIVITY 16 INCH NORMAL RESISTIVITY POINT RESISTIVITY LOG

FILE NO. 2328 COMPANY: RIVERSIDE, INC.

WELL:

LEGACY EAGLE TEST WELL 1

FIELD:

CITY OF EAGLE

COUNTY: ADA

STATE: IDAHO

G.P.S.: 43.70215 N, 116.42629 W

OTHER LOGS:

LOCATION: SE NW

SEC: 11 TWP: 4N

RGE: 1 W

NONE

PERMANENT DATUM:

GROUND LEVEL

ELEVATION:

2520'est.

LOG MEASURED FROM:

GROUND LEVEL

RUN NO.	ONE		
DATE	02/03/06		
DRILLER:	RIVERSIDE, INC		
BIT SIZE @ DEPTH	20" 8" to 465"		
BIT SIZE @ DEPTH			
CASING SIZE @ DEPTH	32'' 8'		
ASING SIZE @ DEPTH			
LOGGER:			

LOGGER:       DEPTH     465'       CASING DEPTH     8'       BOT LOG INTERVAL     755'	
CASING DEPTH 8'	W
BOT LOG INTERVAL 755'	
TOP LOG INTERVAL. 0'	
TYPE FLUID IN HOLE MUD	
Rm@TEMP N/A	
SAMPLE SOURCE N/A	
FLUID LEVEL FULL	
TIME SINCE CIRC. N/A	
RECORDED BY: Oneyear	
WITNESSED BY: Mr. Duncan	

				_		_	 						
	.∨AL	INT. FEET	460'	450'	450								
	LOGGED INTERVAL	TO	-	_ 5	15								
	DOOT	FROM	461	465	465'								
	4CE	SIZE CURIE	N/A	N/A	N/A								
	SOURCE	TYPE	N/A	N/A	N/A								
	SE	RX-RX FEET	N/A	N/A	N/A								
	SPACING	Tx-Rx FEET	٨/٧	N/A	N/A								
LOGGING DATA	DETECTOR		1"X4" Sont N/A	N/A	N/A							-	
100001	LOGGING DE	SPEED FT./MIN	30	50	50			ation.	ration.				
	507	UPHOLE DIG INT SPEED S.N. FEET FT./MIN	0.2	0.2	0.2			op calibr	S):Downhole and shop odibration. 1.1.0G		dard.		
	  -	UPHOLE S.N.	1 480	1480	1480			de and st				120 API Standard.	
	EQUI PMENT	PROBE S.N.	1440	1000	0001			):Downho	90T				
		MODEL	ALP	GOIRLP	GOIRLP			CTOR(S	ME(S):1		κ) Φ	ed with	
	200	ģ	One	One	One			A H	E N		⊢ 47	brate	
		FUNCTION	Gamma	16''& 64'' N	S.P.&Pt.Res			CALIBRATION FACTOR(	DIGITAL FILE NAME(S):1.LOG	REMARKS:	MSI Acquire Type 3	Gamma calibrated with	

### Analytical Laboratories, Inc.



1804 N. 33rd Street Boise, Idaho 83703 Phone (208) 342-5515

Date Report Printed: 4/4/2006 8:40:48 http://www.analyticallaboratories.com

### Laboratory Analysis Report

Sample Number: 0608752

Collected By: C DUNCAN

Submitted By: B TOMISSER

Source of Sample:

TEST WELL #1 (GROUNDWATER)

HOLLADAY ENGINEERING CO 32 N MAIN

**PO BOX 235** PAYETTE, ID 83661

Attn: CHRIS DUNCAN

Time of Collection:

10:30

Date of Collection:

3/24/2006

Date Received:

3/24/2006

Report Date:

4/4/2006

PWS#:

PWS Name:

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Arsenic Low	0.01	<0.005	mg/L	0.005	EPA 200.8	3/31/2006	JH
Iron, Fe	UR	0.08	mg/L	0.05	EPA 200.7	3/27/2006	KC
™agnesium, Mg	UR	4.97	mg/L	0.10	EPA 200.7	3/29/2006	KC
nganese, Mn	UR	<0.05	mg/L	0.05	EPA 200.7	3/27/2006	KC
Nitrate (as N)	10	<0.2	mg/L	0.2	EPA 300.0	3/25/2006	BF
Nitrite (as N)	1.00	< 0.01	mg/L	0.01	EPA 353.2	3/25/2006	BF
Fluoride, F	4.0	0.45	mg/L	0.1	EPA 300.0	3/28/2006	WW
Sulfate, SO4	UR	14	mg/L	1	EPA 300.0	3/28/2006	WW

Thank you for choosing Analytical Laboratories for your testing needs.

If you have any questions about this report, or any future analytical needs, please contact: Michael Moore

### Analytical Laboratories, Inc.

1804 N. 33rd Street Boise, Idaho 83703 Phone (208) 342-5515

Date Report Printed: 9/12/2006 10:55:4

http://www.analyticallaboratories.com

**IBOL** 

8/21/2006

### Laboratory Analysis Report

Sample Number: 0608753

Attn: CHRIS DUNCAN

HOLLADAY ENGINEERING CO

32 N MAIN PO BOX 235

PAYETTE, ID 83661

Time of Collection:

10:30

Date of Collection:

3/24/2006

Date Received:

**Test Requested** 

Gross Alpha

Gross Beta

3/24/2006

Report Date:

9/7/2006

PWS#:

Analysis

Result 4.6+/-2.8

MCL

PWS Name:

pCi/L

rws name:				
Units	MDL	Method	Date Completed	Analyst
pCi/L		EPA 900.0	8/21/2006	IBOL

EPA 900.0

C DUNCAN

TEST WELL #1 (GROUNDWATER)

Submitted By: B TOMISSER

Collected By:

Source of Sample:

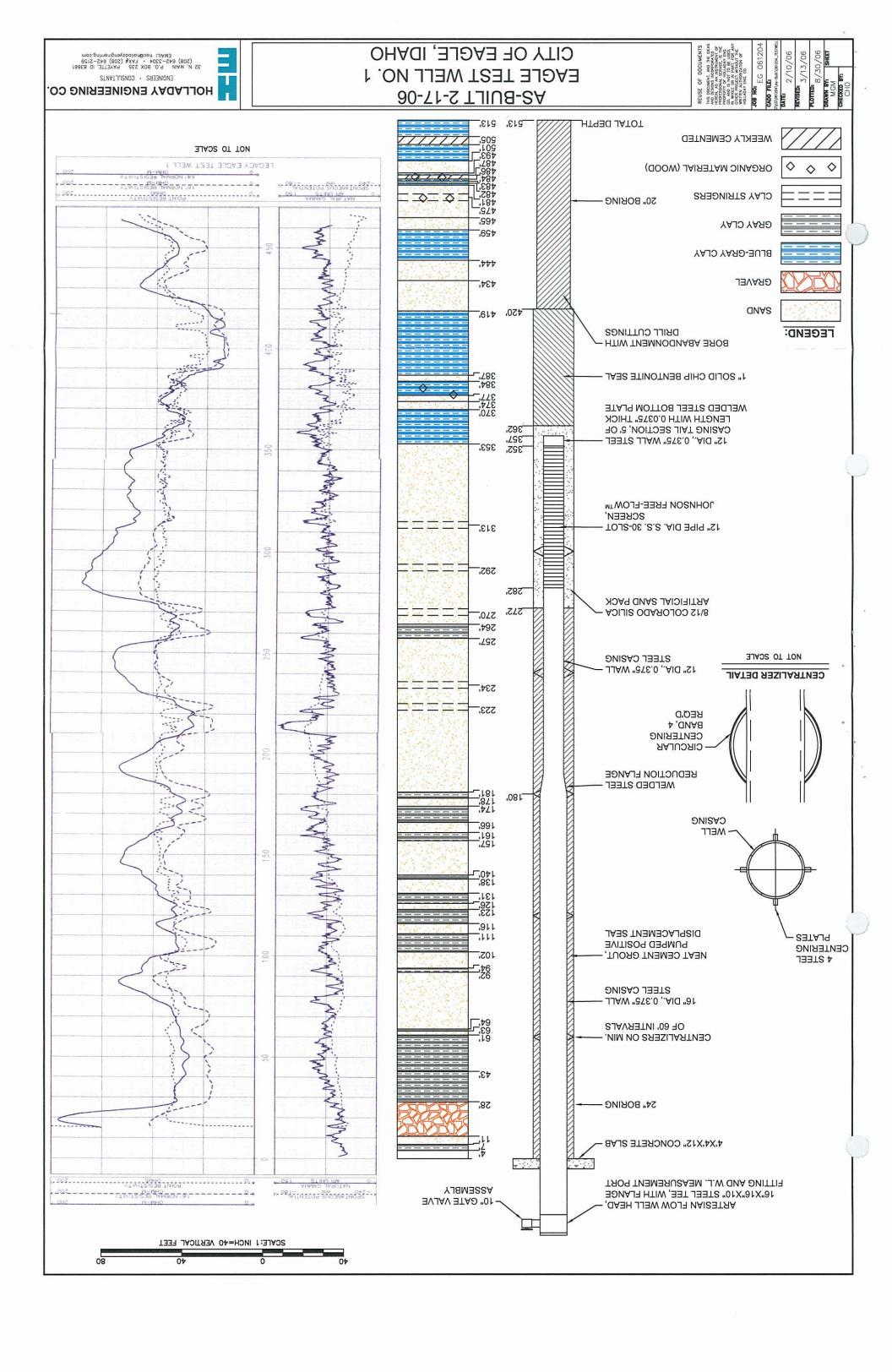
Gross Beta testing by Idaho Bureau of Laboratories (IBOL).

Gross Alpha testing by Idaho Bureau of Laboratories (IBOL).

-Midael Man 9/13/00

Thank you for choosing Analytical Laboratories for your testing needs

If you have any questions about this report, or any future analytical needs, please contact: Michael Moore



6/C2 WELL DRILLER'S REPOR		Inspected by	
	1	Twp Age	\$ec
1. WELLTAG NO. D 0043405  DRILLING PERMIT NO. 893605 - 837870		1/4 1/4	
Water Right or Injection Well No. 63-52039, 63-32090	12. WELL TESTS:	Lat: : : Lor	The state of the s
Total Figure 6 in Joseph From Foreign From From From From From From From From	☐ Pump ☐ Ba		
2. OWNER:		Drawdown Primping Level	Time
Name CITY OF FACLE Address 310 E STATE ST	1125 Opm	+5.3'	- 10 MIN
Address 310 E STATE ST			
City FAGLE State ID Zip X36/6			
3. LOCATION OF WELL by legal description:		Bot	tom hole temp.
You must provide address or Lot, Rik, Sub, or Directions to well, WELL	Water Quality test or comme		
Two, 学 North 2回 or South 川/東南名/2月197. A	))		Water Encounter
Hoe. / East 1 or West X1	713. LIMOLOGIC LOG:	(Describe repairs or abandonme	ent) Wester
Sec. 1/4 NW 1/4 SE 1/4 Gov't Lot County A DA	Bore From To Rem	arks: Lithology, Water Quality & Te	emperature Y N
	28 0 3 70	P SOIL	
Address of Well Sharpo W of INTERSACTION of W TATLOCK No +		IN GRAVEL	
W COLDES OF PRICE OF THE FIG. ALL		CLAIA	
W GOLDS N CEDIEN IN IN IA City EIGGLE  COMM RE DOES THE CONTROL OF	1100 -1 15 -1		
USBSY BIK S Sub. Name EAGLE FIELD ESTATES		IGTAN CLAY	
	63/35 SAN	D WYSM TAN CLAW	A STREAMS
4. USE:	135183 BAN	CLAU " / SAND ST	P11/43
Li Domestic Bo'Municipal ☐ Monitor ☐ Irrigation	183189 FIN	E-MEN SAND	
☐ Thermal ☐ injection IXI Other 755 ☐	189 1931 TAN	CL114	
		D SAN BRAVEL	
5. TYPE OF WORK check all that apply (Replacement etc.)	1715 232 CLA		_
翼 New Well	4 232 290 SON	D FINE MED 17 : C	1.44 57 4801-
6. DRILL METHOD:	20290297 5111	VA-PTINE	
☐ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other ★FUEPS &	1397339 BA	DUSTY GREEN + GER	# 3/1/14
		ESE SHALL SOME DE	y garage
7. SEALING PROCEDURES	1426 344 DAR	MUST 4 CLASS	
Seal Meterial Prom To Weight / Volume Stani Pleasment Mothed			
CEMENT GROUT O 300 25/4815 PLIMPED TROM			
POTTUM TO TOP			
Was drive shoe beel tested? ☐Y ☑ N Shoe Depth(s)	<del></del>		
Was drive shoe beal tested?			
B. CASING/LINER: 380' 76"X 13" REDUCER.			
Dismeter From To Gauge Material Casing Liner Walried Threaded			
16 +5 380 375 STEEL D			
13 375 375 STECL A D M			
	, , , , , , , , , , , , , , , , , , ,		
Length of Headpipe Length of Tallpipe 5			
Packer LIY N Type		410.	
9. PERFORATIONS/SCREENS PACKER TYPE			
Perforation Method		· · · · · · · · · · · · · · · · · · ·	
Screen Type & Method of Installation TOHINSON (WIRE LUTERIA)	<u> </u>		
From To Stot Stan Number Diamater Material Casing Liner	0 11 15 15	430	
345 425 .030 18 S.S. 8	Completed Depth		(Measurable)
	Date: Started	<u> </u>	<u>5-9-06</u>
	14. DRILLER'S CERTIFIC		
10. FILTER PACK		well construction standards were o	omplied with at the
Filter Material Prom To Weight / Volume Planament Method	time the rig was removed.		
#6-9 CSST 3MM 330 STAT 30,000 BRY FOUR	Company Name 21156	EDE DENC	Firm No. <u>333</u>
	/	N 25 10 100 100 100 100 100 100 100 100 100	· · · · · · · · · · · · · · · · · · ·
11. STATIC WATER LEVEL OR ARTESIAN PRESSURE:	Principal Driller	De De	110 <u>5 -12 06</u>
fl. below ground Ariesian pressure \$\frac{1}{2}, \frac{1}{2}, \frac{1}{2}\text{b}\text{.} \text{ ]b.}  Deoth flow encountered fit. Describe access port or control devices:	Driller or Operator If	5 to Clarace De	110 G. 22 - 110
Depth flow encounteredft. Describe access port or control devices:  FLONGS CAP OF 3-194" PIPE FLUAS			- · · · · · · · · · · · · · · · · · · ·
	Operator I Principa	Daller and Rig Operator Required	
		i phile: and hig operator required that have signature of Driller/Opera	
TEST WELL FORWARD WHITE COPY T			
		•	÷

Office Lise Only

April 8, 2006

Peter Harris Eaglefield, LLC 6951 Duncan Lane Boise, ID 83714

Subject: Final Design for Eaglefield Well No. 1 (City of Eagle Test Well 4)

Dear Peter:

Drilling of the municipal test well borehole at Eaglefield was completed to approximately 444 feet on April 7, 2006. The borehole is nominal 20-inch diameter and was advanced using the reverse rotary method. The drill cuttings consist primarily of brown sand, tan clay, and brown clay above 438 feet. Blue-gray clay was encountered from 438 to 444 feet.

Geophysical logging was conducted on April 7. Strata Data, Inc. from Casper, Wyoming, was the geophysical contractor. Logs run include natural gamma radiation, spontaneous potential, single point resistivity, 16-inch normal resistivity, and 64-inch normal resistivity.

Drill cuttings and geophysical logs document the presence of a potentially productive sand layer from 330 feet to 433 feet. This sand layer corresponds with the target interval for this well, and we propose completing the well with screens extending from 345 to 425 feet.

The completed well will include 16-inch casing from approximately 5 feet above ground surface to 280 feet, 12-inch casing from 280 feet to 345 feet, 12-inch well screen from 345 feet to 425 feet, and 12-inch tail pipe with plate bottom from 425 feet to 430 feet. A 16-inch by 12-inch welded reducer will be used to connect the 12-inch and 16-inch casing strings. The invert of the 10-inch artesian by-pass line will be approximately 2.5 feet above existing ground surface.

No. 6-9 Colorado Silica Sand filter pack will be installed in the borehole annulus from 320 to 430 feet. Estimated volume is approximately 5 cubic yards.

Bentonite chips will be used as surface seal material. The chips will extend from 320 feet to ground surface. Estimated volume is approximately 34 cubic yards. Prior to installation of casing and screen, the borehole from ground surface to 300 feet will be reamed to 28-inch diameter to facilitate installation of the bentonite surface seal.

We are still discussing well development options with Riverside. Our current thinking is to develop the well initially by bailing, air lifting, or pumping until artesian flow is achieved. After the initial artesian flow clears, development will continue by shutting in the well, pressurizing the casing with compressed air, and then releasing pressure to allow artesian flow. This procedure can be repeated until the artesian flow clears. Air pressures should start low, and gradually increase up to 100 psi. The artesian flow rate and shut-in pressure following initial development will allow a preliminary determination of well capacity as soon as possible. Final development will be completed using the test pump.

A well design schematic, drill log, and field geophysical logs are enclosed for your records.

Please contact me with any questions.

Sincerely,

Terry M. Scanlan, P.E., P.G.

cc: Terry Daugherty - Riverside, Inc.

Rob Whitney - Idaho Department of Water Resources

Chris Duncan - Holladay Engineering

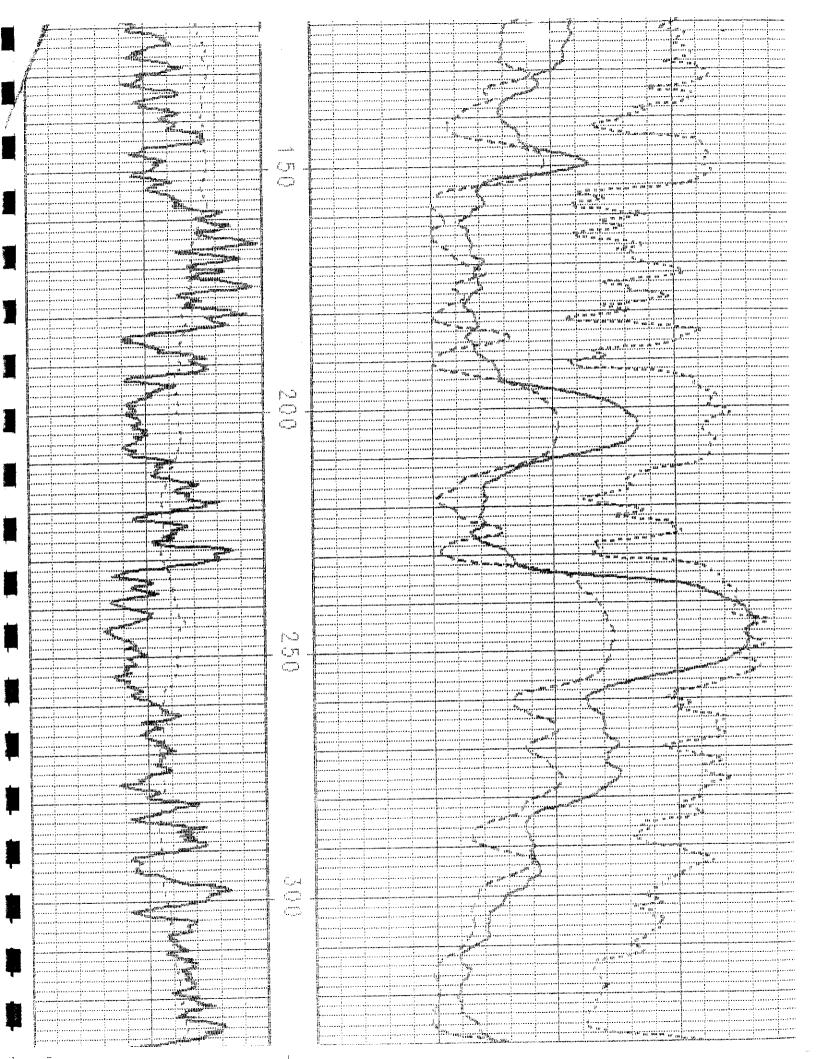
Attachments: Well Schematic

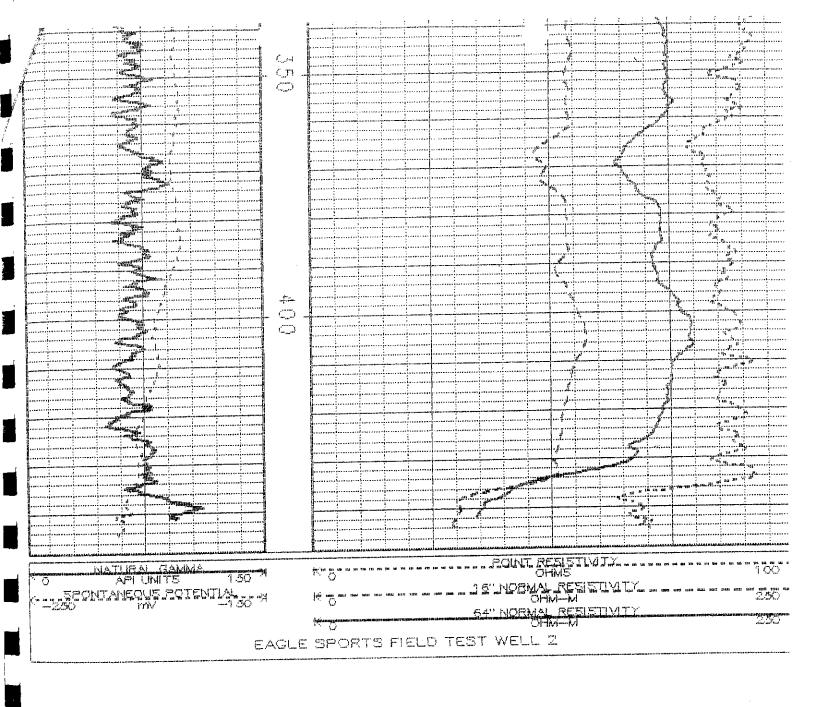
Drill Log

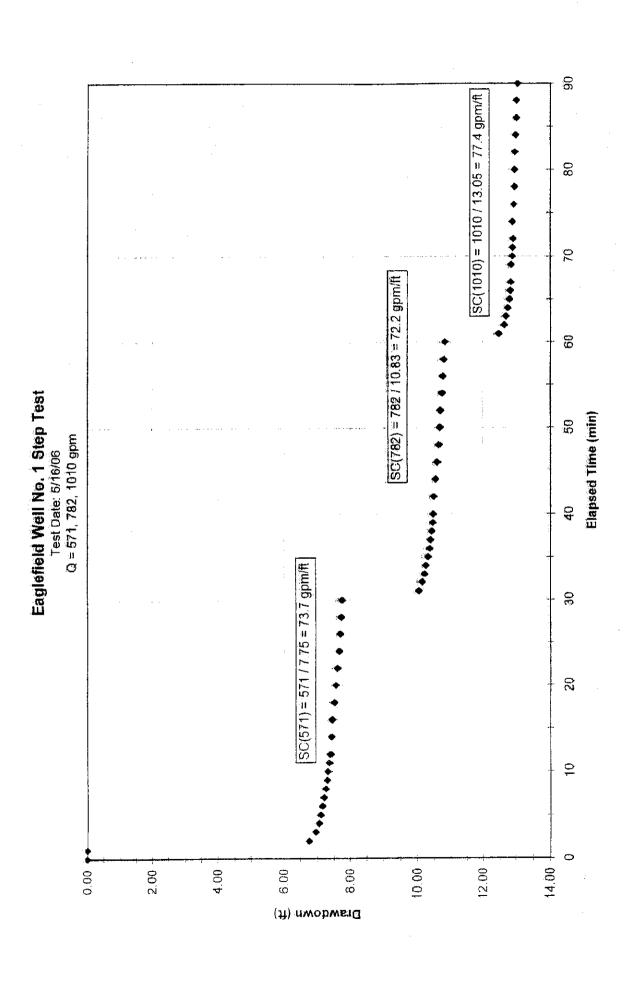
Geophysical Logs

Water Engineering, LLC water resource consultants Date 4/4/06 Client Eaglefield Sheet 1 of 1 Description Final Well Design-Eagle Well #4Job No 421.0010 - flange: @ +5 feet 10-inch discharge@ +2.5 feet 100 28-inch borehole 0 to 300 feet bentonite chip surface seal 0-320 feet 200 16-inch casing +5 to 280 feet -16-inch x 12-inch welded reducer at 280 feet 3 00 20-inch borehole 300-444 feet 12-inch casing 280-345 feet No. 6-9 Colorado Silica Sand 320-430 fee 12-inch 30-slot well screen 345-425 feet 400 tailpipe 425-430 feet backfill 430-444 feet 600 East River Park Lane, Suite 105 · Boise, ID 83706 · 208.383.4140 · fax 208.383.4156 · www.spfwater.com

EAGLE SPORTS FIELD TEST WELL 2 \_\_ CT C <u>.</u>







Eaglefield Well No. 1 Step Test, Q = 571, 782, 1010 gpm Test conducted by: SPF Water Flow measured by: 10x7 orlfice, h = 8, 15, 25-inches Water level measured by: manometer, all water levels above ground surface Elapsed Remarks Time DD (ft) WL (ft) Time Date (min) static 12:56 18.75 5/16 0.00 open gate valve 0 5/16 13:00 0.00 adjust h=8" 13:01 18.75 7 5/16 2 12.00 6.75 13:02 5/16 3 6.95 11.80 13:03 5/16 4 7.05 1º1.70 5/16 13:04 5 7.10 13:05 11.65 5/16 11.60 6 7.15 5/16 13:06 11.55 7 7.20 13:07 5/16 7.25 11.50 8 13:08 5/16 19 7.30 11.45 13:09 5/16 7.32 10 11.43 13:10 5/16 7.36 11.39 47 5/16 13:11 T=16.8, pH=7.44, EC/SC=208:1/244:0 12 7.40 11.35 13:12 5/16 14 7.43 11.32 13:14 5/16 7.45 16 11.30 13:16 5/16 T=15.9. pH=7.46, EC/SC=209.9/246.4 11.23 18 7.525/16 13:18 7.56 20 13:20 77.19 5/16 41 14 22 7.61 13:22 5/16 11.09 24 7.66 13:24 5/16 7:69 26 11.06 13:26 5/16 T=16.1, pH=7.45, EC/8C=209:9/246.4 7.72 28 11.03 13,28 5/16 increase h=15" 30 7.75 13:30 11.00 5/16 8.70 31 10.05 5/16 13:31 10.15 32 13:32 8,60 5/16 10.22 8:53 33 13:33 5/16 34 10.26 8.49 13:34 5/16 35 10.33 8.42 13:35 5/16 10.37 36 8.38 13:36 5/16 10 40 8:35 37 13:37 5/16 38 10.44 8.31 13:38 5/16 difficult to read manometer, behind duct 10.47 8.28 39 5/16 13:39 10.48 40 8:27 5/16 19:40 42 10.50 13:42 8.25 5/16 T=16,1, EC/SC=208.8/245.6 10.55 13:44 8.20 44 5/16 8.15 46 10.60 13:46 5/16 48 10.65 8:10 13:48 5/16 10.68 50 8.07 13:50 5/16 52 10.70 13:52 8.05 5/16 T=16.0, pH=7.38, EC/SC=208.2/245.4 54 10.75 8.00 5/16 13:54 10.77 56 13:56 7:98 5/16 T=16.0, pH=7.37, EC/SC=208.0/244.9 10.80 7.95 58 5/1/6 13:58 10.83 60 14:00 7.92 5/16 6.28 61 12.47 increase h=25" 14:01 5/16 12.64 62 6.11 14:02 5/16

Remarks	DD (ft)	Elapsed Time (min)	WL (ft)	Time	Date
	12.70	63	6.05	14:03	5/16
	12.75	64	6.00	14:04	5/16
	12.81	65	5.94	14:05	5/16
	12.83	66	5.92	14:06	5/15
on flow along discharge channe	12.85	67	5,90	14:07	5/16
reading	12.86	69	5.89	14:09	5/16
gate valve couple of turns	12.90	70	5.85	14.10	5/16
	12.91	71	5.84	14:11	5/16
	12.92	72	5.83	14:12	5/16
), pH=7.43, EC/SC=208.6/245.6	12.90	74	5.85	14:14	5/16
	12.94	76	5.81	14:16	5/16
	12.96	7.8	5.79	14:18	5/16
), pH=7.42, EC/SC=208.7/245.	12.96	80	5.79	14.20	5/16
	12.97	82	5.78	14.22	5/16
	13.00	:8:4	5.75	14:24	5/16
	13.02	86	5.73	14:26	5/16
	13.02	88	5.73	14:28	5/16
gate valve	13.05	90	5.70	14:30	5/16

### Analytical Laboratories, Inc.

1804 N. 33rd Street Boise, Idaho 83703 Phone (208) 342-5515

http://www.analyticallaboratories.com

Date Report Printed:

2/2006 5:21:05 PM

Attn: TERRY SCANLAN, P.E.,P.G.

S P F WATER ENGINEERING, LLC

600 E RIVER PARK LN STE 105

BOISE, 1D 83706

Collected By:

**M MARTIN** 

Submitted By:

**M MARTIN** 

Source of Sample:

**EAGLE FIELD** 

Time of Collection:

14:45

Date of Collection:

5/16/2006

Date Received:

5/16/2006

Report Date:

6/2/2006

PWS:

### **Laboratory Analysis Report**

Sample Number: 0614882

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
			•				
Aluminum, Al		0.24	mg/L	0.10	EPA 200.7	5/18/2006	КC
Antimony Low	<	0:005	mg/L	0.005	EPA 200.8	5/19/2006	JH
Arsenic Low	<	0.005	mg/L	0.005	EPA 200.8	5/19/2006	JH
Barium, Ba		0.07	mg/L	0.05	EPA 200.7	5/18/2006	KC
Beryllium Low	<	0.0005	mg/L	0.0005	EPA 200.8	5/19/2006	JH
Cadmium Low	<	0.0005	mg/L	0.0005	EPA 200.8	5/19/2006	JH
Calcium Hardness		74.3	mg/L	0.25	EPA 200.7	5/19/2006	KC
Calcium, Ca		29.8	mg/L	0.10	EPA 200.7	5/19/2006	KC
Chromium Low	<	0.002	mg/L	0.002	FPA 200.8	5/19/2006	ĴΗ
Copper, Cu	<	0.01	mg/L	0.01	EPA 200.7	5/18/2006	KC
Iron, Fe	<	0.05	mg/L	0.05	EPA 200.7	5/18/2006	KC
Magnesium, Mg		5.22	mg/L	0.10	EPA 200.7	5/19/2006	KC
Manganese, Mn	<	0.05	mg/L	0.05	EPA 200.7	5/18/2006	KC
Mercury, Hg	<	0.0002	mg/L	0.0002	EPA 245.1	5/26/2006	KC
Nickel, Ni	<	0.02	mg/L	0.02	EPA 200.7	5/18/2006	KC
Potassium, K		1.7	mg/L	0.5	EPA 200.7	5/19/2006	KC
Selenium Low	<	0.005	mg/L	0.005	EPA 200.8	5/19/2006	JH
Silica		30.4	mg/L	0.25	EPA 200.7	5/18/2006	KC
Silver, Ag	<	0.005	mg/L	0.005	EPA 272.1	6/1/2006	JH
Sodium, Na		16.3	mg/l.	0.10	EPA 200.7	5/19/2006	KC

MCL - Maximum Contamination Level MDL - Method/Minimum Detection Limit UR - Unregulated

### Laboratory Analysis Report

Sample Number: 0614882

Test Requested	MCL	Analysis Result	Units	MDL	Method	Date Completed	Analyst
Thallium Low	<	0.001	mg/L	0.001	EPA 200.8	5/19/2006	JH
Uranium, U		2	ug/L	1	EPA 200.8	5/26/2006	JH
Zinc, Zn	<	0.005	mg/L	0.005	EPA 200.7	5/18/2006	KC
Corrosivity		-0.9			Langelier	6/2/2006	ww
Calculated at room temperature,	20 deg C. 1	Moderately agg	ressive.				
Nitrate (as N)	<		mg/L	0.2	EPA 300.0	5/16/2006	TL
Ammonia Direct (as N)	<	0.04	mg/L	0.04	EPA 350.1	5/24/2006	JT
Nitrite (as N)	<	0.01	mg/L	0.01	EPA 353.2	5/16/2006	JT
Alkalinity		110	mg/L Ca		SM 2320B	5/22/2006	JS
Chloride, Cl		3	mg/L	1	EPA 300.0	5/16/2006	IT
Conductivity		316	umhos	2	SM 2510B	5/16/2006	KC
Cyanide, Total		< 0.005	mg/L	0.005	EPA 335.4	5/23/2006	ww
Fluoride, F		0.40	mg/L	0.10	EPA 300.0	5/16/2006	JT
рН		7.1	S.U.		EPA 150.1	5/16/2006	ZL
Sulfate, SO4		16	mg/L	1	EPA 300.0	5/16/2006	JT
Turbidity	<	0.5	NTU	0.5	EPA 180.1	5/16/2006	KC
Sand		1	mg/L	0.600	EPA 160.2	5/19/2006	DLR
Surfactants		<0.01	mg/L	.01	SM 5540	5/26/2006	MDM
Total Dissolved Solids		114	mg/L	25	SM 2540C	5/23/2006	DLR

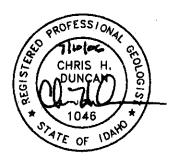
\*MCI = Maximum Contamination Level \*MDI = Method/Minimum Detection Limit \*UR = Unregulated

Midel nere 6/5/2006

### CITY OF EAGLE, IDAHO

7-Day Aquifer Test

June 2006



EG061204

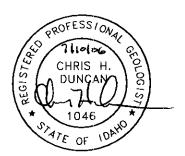
Prepared By

Holladay Engineering Company Payette, Idaho

### CITY OF EAGLE, IDAHO

### 7-Day Aquifer Test

June 2006



EG061204

Prepared By

Holladay Engineering Company Payette, Idaho

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#### INTRODUCTION

In May and June of 2006, the City of Eagle conducted a 7-day constant rate aquifer pump test of the lower Treasure Valley Aquifer system to determine site specific aquifer conditions under Idaho Department of Water Resource applications for water appropriation 63-32089 and 63-32090. The aquifer test site is located in the western portion of the City of Eagle on the former Quarter Circle D. J. Ranch and Eaglefield Development properties. The test site location is shown in Figure 1.

The aquifer test plan was reviewed and approved by the Idaho Department of Water Resources in December 2005 under drilling permit no. 835987 and drilling permit no. 837870. The aquifer test plan included construction of test well no. 1 located in the proposed Legacy development and test well no. 2 located in the Eaglefield development. Well construction and testing information for the wells are included in Appendix B. Holladay Engineering Company was contracted to conduct the aquifer test and provide engineering services for the project.

The aquifer test was composed of three groundwater monitoring and testing phases. Background monitoring (starting on May  $25^{th}$ ) was performed for 7-days prior to the pump and test to evaluate water level tends in the aquifer system. A 7-day constant rate pump test was started on June  $2^{nd}$  and ending on June  $9^{th}$  using a single pumping well and eight monitoring wells (including pumping well) conducted at a pumping rate of 1580 gpm. Seven-days of water level recovery monitoring was performed, immediately following the pump test and ending on June  $15^{th}$ . Additional water level recovery data was collected to June  $19^{th}$ . A total of eight wells (including the pumping well) were used to monitor groundwater levels during the aquifer test. The monitoring well configuration and well completion information is shown in Figure 1.

The aquifer test generated approximately 300,000 water level measurements that were used to evaluate the aquifer system response to pumping. Transmissivity and storativity values were computed using the Theis Method from drawdown and recovery datasets of monitoring wells completed in the lower aquifer zone.

This report presents data and results from the aquifer test. The following sections describe test procedures, data collection, data corrections, results and analysis.

#### **AQUIFER TEST PROCEDURES**

The aquifer test was designed as a constant rate pump test using 8 wells available at the site (including pumping well) for groundwater level monitoring. The aquifer test project was performed in three phases; background monitoring, constant rate pumping test and recovery monitoring. Each phase was conducted for a minimum duration of 7-days. Background water level monitoring was performed to determine groundwater level trends prior to pump testing. The pump test phase was conducted primarily to determine transmissivity and storativity valves in the lower aquifer zone and groundwater responses to pumping at monitoring well locations across the site. The recovery monitoring phase was conducted to determine transmissivity and storativity valves in the lower aquifer zone during water level recovery and to characterize the recovery response to pumping at monitoring well locations across the site.

The aquifer test was performed according to the approved aquifer test plan. Two changes were made prior to the start of the test. The pumping well location was moved to test well no. 2 (Eaglefield well) due to the lower capacity of test well no. 1, measured at approximately 1,300 gpm. Well capacity testing and construction information is located in Appendix D. Access to the monitoring well no. 6 (Rick's well) was lost just prior to the start of the test. The City was able to gain limited use of the well during the aquifer test. The data set for monitoring well no. 4 shows limited background and recovery water level data.

### **Monitoring Wells**

The monitoring wells (including the pumping well) used during the aquifer test are listed below and includes a description of well completion and monitoring configuration. Monitoring well locations are shown in Figure 1. Additional well construction information, well driller's reports and other available information for each monitoring well is located in Appendix B.

1. Monitoring well no. 2 (test well no. 2 - Eaglefield): 12- to 16-inch diameter production well with 12-inch well screens at a depth of 345 ft. to 425 ft. Total well depth is 430 ft. The well is located in the SE ¼ of the NW ¼, Section 11, T.4N, R.1W and surveyed location is shown on Figure 1. Surveyed ground surface elevation of 2514.15 ft. above mean sea level (amsl). Static water level is artesian. This well was used as the pumping well during the aquifer test. A line-shaft turbine pump (Lyane 12 TLC-4 bowl) was installed for the pump test with an intake depth of 111.22 ft. below ground surface and 100 h.p. 3-phase motor. Two 1-inch diameter pvc plastic sounder tubes were installed from the bottom of the pump column assembly to monitoring ports in motor flange. Water level was monitored with a pressure transducer (Instrumentation N.W. PS-9 with 0-

- 100 psi sensor) in monitoring port no. 1 and measured by hand using a water level meter and 16 foot sight tube at monitoring port no. 2. A drawing of the wellhead monitoring configuration is located in Appendix B.
- 2. Monitoring well no. 1 (test well no. 1 Legacy): 12- to 16-inch diameter well completed with 12-inch diameter screens from a depth of 282 ft. to 352 ft. Total well depth is 362 ft. The well is located in the SW ¼ of the NE ¼, Section 11, T.4N, R.1W and surveyed well location is shown on Figure 1. Surveyed ground surface elevation of 2512.97 ft. amsl. The distance from the pumping well is 1604.58 ft. Static water level is artesian. The wellhead was configured with two 1¼ -inch diameter monitoring ports located in the sealed flange plate cover. Water level was monitored with a pressure transducer (Instrumentation NW PT2X with 0-50 psi sensor) in monitoring port no. 1 and measured by hand using a water level meter and 16 foot sight tube at monitoring port no. 2. A drawing of the wellhead monitoring configuration is located in Appendix B.
- Monitoring well no. 4 (Quarter Circle D. J. Ranch well no. 4): 6-inch 3. diameter irrigation production well completed with an open interval from 235 to 260 feet below ground surface. Total well depth is 260 feet. There is no pump present in the well. The IDWR well driller's report is not available. The well was video inspect using a down-hole camera to determine well completion. Well casing leaks at a constant rate measured at 11.8 gpm at the wellhead surface. Well is located in the SE 1/4 of the SW 1/4, Section 3, T.4N, R.1W and surveyed well location is shown on Figure 1. Surveyed ground surface elevation of 2501.86 ft. amsl. The distance from the pumping well is 6276.65 ft. Static water level is artesian. The wellhead was configured with three 11/4 -inch diameter monitoring ports located in the flange plate cover. Water level was monitored with a pressure transducer (Instrumentation Northwest PT2X with 0-50 psi sensor) in monitoring port no. 1 and measured by hand using a water level meter and 6 foot sight tube at monitoring port no. 2. A 0-15 psi pressure gauge was installed in monitoring port no. 3. A drawing of the wellhead monitoring configuration is located in Appendix B.
- 4. Monitoring well no. 6 (Quarter Circle D. J. Ranch well no. 6): 16- to 10-inch irrigation production well with line-shaft turbine pump and completed with an open interval from 234 to 395 feet below ground surface. Total well depth is 406 feet. Water level is artesian. Well is located in the SE ¼ of the SW ¼, Section 2, T.4N, R.1W and surveyed well location is shown on Figure 1. Surveyed ground surface elevation of 2525.84 ft. amsl. The distance from the pumping well is 3339.80 ft. Static water level is artesian. The wellhead was configured with two 1¼ -inch diameter monitoring ports located in motor support housing. Water level

- was monitored with a pressure transducer (Instrumentation N.W. PS-9 with 0-50 psi sensor) in monitoring port no. 1 and measured by hand using a water level meter and 6 foot sight tube at monitoring port no. 2. A drawing of the wellhead monitoring configuration is located in Appendix B.
- Monitoring well no. 9 (Strata monitoring well no. 1): 1¼ inch pvc plastic monitoring well completed from 45 to 55 feet below ground surface. Total well depth is 55 feet. Static water level is below ground surface. Well is located in the NW ¼ of the NW ¼, Section 11, T.4N, R.1W and surveyed well location is shown on Figure 1. Surveyed ground surface elevation of 2510.52 ft. amsl. The distance from the pumping well is 3450.28 ft. The measuring point is located on north side of casing. Water level was monitored with a downhole pressure transducer (Instrumentation Northwest PT2X with 0-50 psi sensor) and measured by hand using a water level meter. A drawing of the wellhead monitoring configuration is located in Appendix B.
- 6. Monitoring well no. 10 (Strata monitoring well no. 1B): 1-inch pvc plastic monitoring well completed from 10 to 15 feet below ground. Total well depth is 15 feet. Static water level is below ground surface. Well is located in the NW ¼ of the NW ¼, Section 11, T.4N, R.1W and surveyed well location is shown on Figure 1. Surveyed ground surface elevation of 2510.52 ft. amsl. The distance from the pumping well is 3425.35 ft. The well measuring point is located on north side of casing. Water level was monitored with a downhole pressure transducer (Instrumentation Northwest PT2X with 0-50 psi sensor) and measured by hand using a water level meter. A drawing of the wellhead monitoring configuration is located in Appendix B.
- Monitoring well no. 11 (United Water Idaho monitoring well 1A, Hope 7. Lutheran Church): 2-inch pvc plastic monitoring well (part of a nested monitoring well) completed at staggered screen intervals from 280 ft. to 380 ft. below ground surface. Total well depth is 380 feet. Well is located in the SE 1/4 of the SE 1/4, Section 11, T.4N, R.1W and surveyed well location is shown on Figure 1. Surveyed ground surface elevation of 2518.83 ft. amsl. The distance from the pumping well is 2405.02 ft. Static water level is artesian. The wellhead was configured with an open ½-inch ball valve connected to a tee fitting used as two measuring ports. Port no. 1 was configured a sealed pressure chamber which housed a pressure transducer (Instrumentation Northwest PT2X with 0-50 psi sensor). A 0-15 psi pressure gauge was installed in port no. 2. Groundwater levels were measured by pressure transducer and by pressure gauge. A drawing of the wellhead monitoring configuration is located in Appendix B.

Monitoring well no. 12 (United Water Idaho monitoring well 1 B, Hope 8. Lutheran Church): 2-inch pvc plastic monitoring well (part of a nested monitoring well) completed at staggered screen intervals from 400 ft. to 500 ft. below ground surface. Total well depth is 500 feet. Well is located in the SE 1/4 of the SE 1/4, Section 11, T.4N, R.1W and surveyed well location is shown on Figure 1. Surveyed ground surface elevation of 2518.83 ft. amsl. The distance from the pumping well is 2405.02 ft. Static water level is artesian. The wellhead was configured with an open 1/2-inch ball valve connected to a tee fitting used as two measuring ports. Port no. 1 was configured a sealed pressure chamber which housed a pressure transducer (Instrumentation Northwest PT2X with 0-50 psi sensor). A 0-30 psi pressure gauge was installed in port no. 2. Groundwater levels were measured by pressure transducer and by pressure gauge. A drawing of the wellhead monitoring configuration is located in Appendix B.

### Water Level Measurements

Water level measurements were computed from downhole pressure transducer data collected at each monitoring well location. Transducer pressure measurements were made using Instrumentation Northwest PT2X and PS-9 series transducers with built-in data loggers. PT2X transducers record absolute pressure using a 0-50 psi sensor. Absolute pressure measurements were converted to gauge pressure using direct barometric compensation by subtracting corresponding atmospheric pressure measurements for the same time interval. Barometric pressure was measured and recorded using an Instrumentation Northwest PT2X-BV barometric sensor and data logger unit. Barometric pressure corrections were processed with the Instrumentation Northwest Aqua4plus software. The PS-9 series transducers are designed to measure gauge pressure directly using an atmospheric pressure compensation tube built into the unit and cable assembly.

Monitoring well gauge pressure data was converted to feet of groundwater above the pressure transducer sensor. The data was then converted to depth of groundwater below the measuring point (MP) using the sensor depth setting.

Groundwater level elevation data was calculated using the measured distance of the MP from the surveyed land surface elevation at each monitoring location and depth to groundwater data below the MP. The land surface elevation and location of each monitoring well was surveyed. Survey data for monitoring wells is located in Appendix D. Groundwater measurements and data conversions are shown on the monitoring well data sheet located in Appendix A.

Water level measurements were collected on 1-minute intervals during the background monitoring phase of the test. During the pumping and recovery phases of the test, water level measurements were made on 30-second intervals for the first 2-hour period. After the second hour, measurements were made on 1-minute intervals for the remainder of the test period. Backup hand measurements were made at all monitoring well locations to provide redundancy in the event an electronic transducer failed.

### Pumping Configuration and Discharge Measurements

Test well no. 2 (Eaglefield) was used as the pumping well for the aquifer test. A line-shaft turbine pump (Layne 12 TLC-4 bowl) was installed with an intake depth of 111.22 ft. below ground surface. The pump was driven by a 100 h.p. 3-phase G.E. motor powered by a Caterpillar diesel generator. Groundwater was discharged was controlled through an 8-inch diameter gate valve and piped approximately 330 feet to the northwest of the wellhead through 8-inch diameter portable aluminum irrigation pipe. Water flow was measured at the end of the pipeline using a 10-inch diameter circular orifice weir with 4-inch diameter constant discharge orifice plate and manometer tube. Water was discharged into the Middleton Irrigation Association canal system and flowed offsite.

#### AQUIFER TEST RESULTS

### Barometric Pressure Monitoring

Barometric pressure measurement station was set up at the pumping well (test well no. 2) site. Barometric pressure measurements were performed on 1-minute intervals from May 24<sup>th</sup> to June 20<sup>th</sup>. The barometric data was use to correct PT2X transducer measurements. All barometric pressure corrections were processed with the Instrumentation Northwest Aqua4plus software.

Barometric data collected during the test is shown in the barometric data sheets located in Appendix A. A graph of barometric data collected during the test is located in Appendix C.

The pressure transducer data collected at the pumping well (test well no. 2) using an Instrumentation Northwest PS-9 gauge pressure transducer appears to be influenced by atmospheric pressure changes during the test. The water level elevation data graph of test well no. 2 shows a diurnal rise and fall in water level. The PS-9 transducer designed to operate with an atmospheric pressure compensation air tube. The transducer appears to have failed to fully compensate

for barometric pressure changes. The transducer data was not corrected and results presented as recorded.

### **Background Water Level Monitoring**

Background water level monitoring started at 10:00 am on May 25, 2006, except at monitoring well no. 6 were the City did not gain well access until June 2, 2006. Background water level measurements were suspended at test well no. 2 during the installation of the pump on May 25<sup>th</sup> and 26<sup>th</sup>. The pump installation required discharge of artesian flow on May 26, 2006 from 12:30 am to 3:30 for a brief period at 5:15 pm to install the transducer. Artesian flow was discharged into the irrigation canal adjacent to the well site. The pumping system was also tested intermittently between 10:00 am and 12:00 pm on May 31, 2006, which affected water levels in the aguifer during this period.

Water level data collected at each monitoring well is shown on the observation well data sheets located in Appendix A. Background water level data and trends are shown in the monitoring well water level elevation graphs for individual monitoring wells are located in Appendix C.

### **Pump Test Water Level Monitoring**

The phase of the aquifer test was started on June 1, 2006 at 10:00 am as scheduled. The pumping rate was adjusted quickly at the discharge gate valve and set to a constant flow rate of 1580 gpm during the test. The discharge flow rate was monitored continuously during start up and on a regular basis (approximately 1-hour intervals) during the later stage of the test. At 3:45 pm on June 1, pumping stopped due to a power failure. A field decision was made to restart the test on June 2 after the aquifer was allowed to recover overnight.

On June 2nd, at 10:00 am, the pump test was restarted for a 7-day period ending on June 9<sup>th</sup> at 10:00 am. At start up the pumping rate was adjusted at the discharge gate valve and set to a constant flow rate of 1580 gpm. The discharge flow rate was monitored continuously during start up and on a regular basis (approximately 1-hour intervals) during the later stage of the test. Two power failures occurred during the test on June 4<sup>th</sup> at 13:11 and June 6<sup>th</sup> at 18:51. In both cases, the pump was restarted immediately, resulting in only a few minutes of non-pumping time. Periodic flow adjustments were made at the discharge gate valve to maintain a constant flow rate of 1580 gpm. The flow rate was observed to drift up to approximately 1% before a flow adjustment was made. In the later portion of the pump test (June 8<sup>th</sup> and 9<sup>th</sup>), water levels in the well were observed to be fluctuating approximately 0.2 inches in the well while performing a hand measurements with an

e-tape. On June 9<sup>th</sup> at 10:00 am, the pump was stopped after seven continuous days of pumping.

Groundwater water level data collected during the test is shown in the observation well data sheets located in Appendix A. Water level elevation graphs for individual monitoring wells are located in Appendix C. Water level drawdown results for test well no. 1 (Legacy), test well no. 2 (Eaglefield), monitoring well 11 (UWI 1A), and monitoring well 12 (UWI 1B) are shown on semi-log plots located in Appendix C.

### Recovery Water Level Monitoring

The aquifer recovery period started immediately following the end of pumping on June 9<sup>th</sup> at 10:00 am and continued for seven days to June 16 at 10:00 am. Monitoring well transducers recorded data to June 19<sup>th</sup> until the time each transducer was removed from the well, with the exception of monitoring well no. 6 (Rick's irrigation well) and the pumping well (Test well no. 2). The additional data collected from June 16<sup>th</sup> to June 19<sup>th</sup> was processed and included in the recovery data set.

Several events occurred during the recovery monitoring period. The transducer at monitoring well no. 6 was removed on June 10<sup>th</sup> at 7:39 am. Monitoring well no. 6, an irrigation production owned by Tom Rick, was pumped for irrigation on June 10<sup>th</sup> from approximately 9:15 am to 5:00 pm at an estimated flow rate of 1000 gpm. On June 13<sup>th</sup>, the artesian discharge valve at the pumping well (Test well no. 2) was opened from 10:30 am to 1:08 pm to allow removal of the line-shaft turban pump assembly. The transducer was removed and continued to record measurements while out of the well. The open artesian discharge produced approximately 1000 gpm during this period. Water was discharge into the irrigation canal adjacent to the well site.

Groundwater water level data collected during the test is shown in the observation well data sheets located in Appendix A. Water level elevation graphs for individual monitoring wells are located in Appendix C. Water level recovery results for test well no. 1 (Legacy), test well no. 2 (Eaglefield), monitoring well 11 (UWI 1B), and monitoring well 12 (UWI 1B) are shown on semi-log plots located in Appendix C.

### **AQUIFER TEST DATA ANALYSIS**

Water level data collected from the pumping and recovery periods of the aquifer test from monitoring well no. 1 (test well no. 1), monitoring well 11 (UWI 1A), monitoring well no. 12 (UWI 1B) and the pumping well (test well no. 2) was plotted as drawdown and recovery semi-log and log-log scale graphs. Monitoring well

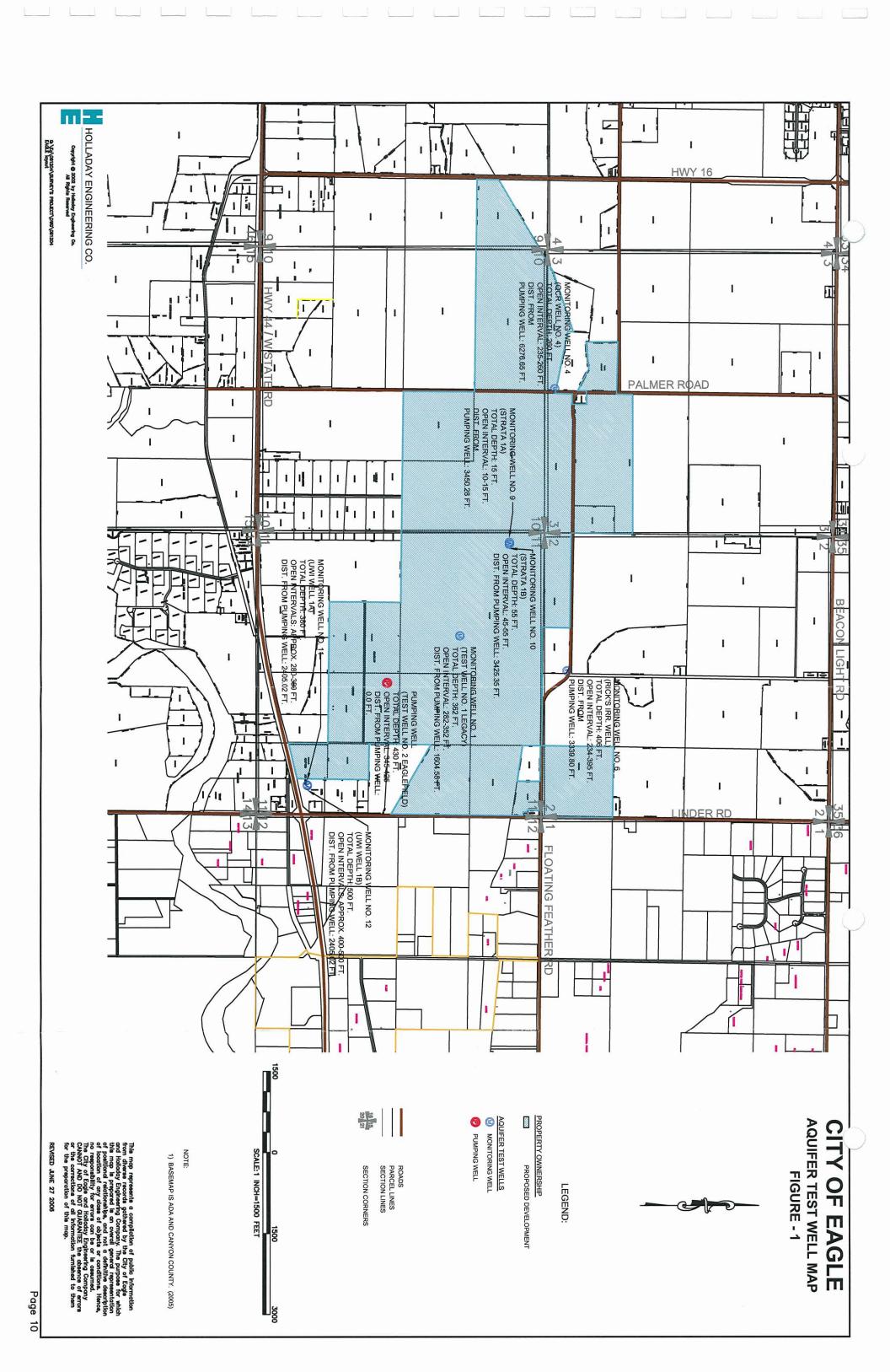
drawdown and recovery graphs are located in Appendix C. The drawdown and recovery data sets were analyzed using the Theis Method, based on a confined to semi-confined lower aquifer conceptual model for the test site. Transmissivity and storativity values computed from type curve matching of each data set using the Theis Method in AquiferTest 4.0 (Waterloo Hydrogeologic, Inc) computer software and results are listed below in Table 1.

Table 1
Computed Transmissivity and Storativity Values

	Hansinissivity							
Monitoring Well	Data Set	(ft²/day)	Storativity					
Test well no. 1 (Legacy)	Drawdown	2.01 x 10 <sup>4</sup>	1.30 x 10 <sup>-2</sup>					
Test well No. 2 (pumping well)	Drawdown	2.00 x 10 <sup>4</sup>						
Monitoring well no. 11 (UWI 1A)	Drawdown	1.85 x 10⁴	6.62 x10 <sup>-4</sup>					
Monitoring well no. 12 (UWI 1B)	Drawdown	1.80 x 10 <sup>4</sup>	8.00 x 10 <sup>-4</sup>					
Test well no. 1 (Legacy)	Recovery	1.95 x 10 <sup>4</sup>	1.58 x 10 <sup>-2</sup>					
Test well No. 2 (pumping well)	Recovery	1.75 x 10⁴						
Monitoring well no. 11 (UWI 1A)	Recovery	1.77 x 10⁴	7.80 x 10 <sup>-4</sup>					
Monitoring well no. 12 (UWI 1B)	Recovery	1.80 x 10 <sup>4</sup>	7.90 x 10 <sup>-4</sup>					
Average Value	Test	1.87 x 10 <sup>4</sup>	5.31 x 10 <sup>-3</sup>					

Water level data collected from the pumping and recovery periods of the aquifer test from monitoring well no. 1 (test well no. 1), monitoring well 11 (UWI 1A), monitoring well no. 12 (UWI 1B) and the pumping well (test well no. 2) was plotted as drawdown and recovery semi-log and log-log scale graphs. Monitoring well drawdown and recovery graphs are located in Appendix C. The drawdown and recovery data sets were analyzed using the Theis Method, based on a confined to semi-confined lower aquifer conceptual model for the test site. Transmissivity and storativity values computed from type curve matching of each data set using the Theis Method in AquiferTest 4.0 (Waterloo Hydrogeologic, Inc) computer software and results are listed below in Table 1.

In the Theis analysis type curve fit, data points influenced by well interference or discharge of artesian flow were given a lower weighted valve or excluded from the data set to obtain a more representative type curve fit. The Theis analysis graphs showing calculated transmissivity and storativity valves for each data set are located in Appendix C. The computed average valve for transmissivity is 1.87 x 10<sup>4</sup> ft²/day (139,886 gal/day/ft). The average value for storativity is 5.31 x 10<sup>-3</sup>.

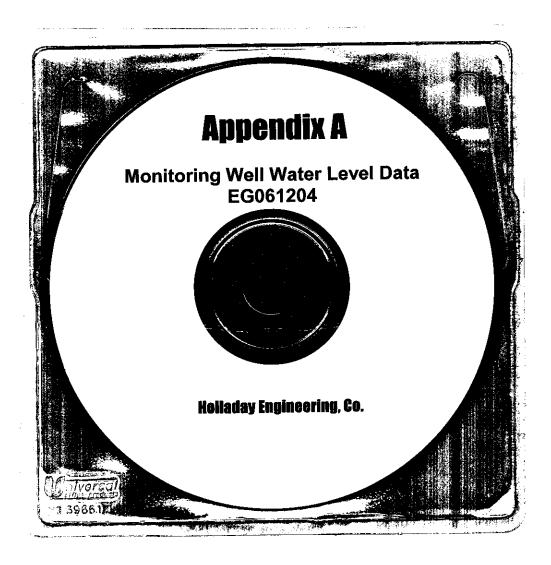


### **APPENDIX A**

(Computer Disk Enclosed)

### MONITORING WELL WATER LEVEL DATA

- 1. Test Well 2 (Eaglefield)(Pumping Well)
- 2. Test Well 1 (Legacy)
- 3. Monitoring Well 4 (QCR 4)
- 4. Monitoring Well 6 (Rick's)
- 5. Monitoring Well 9 (Strata 1A)
- 6. Monitoring Well 10 (Strata 1B)
- 7. Monitoring Well 11 (UWI 1A)
- 8. Monitoring Well 12 (UWI 1B)
- 9. Barometer



### APPENDIX B

### MONITORING WELL INFORMATION

- 1. Test Well 2 (Eaglefield)(Pumping Well)
- 2. Test Well 1 (Legacy)
- 3. Monitoring Well 4 (QCR 4)
- 4. Monitoring Well 6 (Rick's)
- 5. Monitoring Well 9 (Strata 1A)
- 6. Monitoring Well 10 (Strata 1B)
- 7. Monitoring Well 11 (UWI 1A)
- 8. Monitoring Well 12 (UWI 1B)

TEST WELL 2 (Eaglefield)(Pumping Well)

Form 238-7	Outposes
Form 238-7 OF WATER RESC 6/02 WELL DRILLER'S REPORT	
	TwpSec
1. WELL TAG NO. D 0043405	1/4 1/4 1/4
DRILLING PERMIT NO. 898605 - 837870  Water Right or Injection Well No. 63-32089, 63-32090	12. WELL TESTS: Lat: : Long: : :
Table Tright of injudicion view to a series to a serie	□ Pump □ Baller □ Air □ Flowing Artesian
2. OWNER:	Yinid gal./min, Drawdown Pizmping Lovel Time
Name CITY OF EAGLE Address Sto E STATE ST.	1123 apm +5.2' 10 min
Otty State ID Zip 836/6	Water Temp Bottom hole temp
3. LOCATION OF WELL by legal description:	Water Quality test or comments:
You must provide address or Lot, Bik, Sub, or Directions to well. WE. Line	B. A. B. Allen . E.
Twp. North I or South LI (ERSLEFIELD)  Rge	13. LITHOLOGIC LOG: (Describe repairs or abandonment) Water
Sec	Bore From To Besserve- Lithology Water Quality & Temperature V M
Gov't Lot County A ST	Dh.
Lat: ; Long; ; ;	13 ABRIVER GRAVEL
Address of Well Site DO W OF INTERSECTION OF W TATLOCK IN +	I AE 48 TAN CLAM
Chora of Busin named by most of Destinance in Them or Londondoods.  Cliny E/9 GL E	1 48 56 SAND
USB 84 Blk R Sub. Name EAGLE FIELD ESTATES	56 63 RUSTY TAN CLAY
	63/35 SAND W/SM TANGLAY STREAKS
4. USE:	135/83 BAN CLAU "/SAND STREMES
Li Domestic ™Municipal ☐ Monitor ☐ Irrigation	183189 FINE - MYS SAND
☐Thermal ☐ Injection Ø Other 7857	189 194 TAN CLINIA
	194315 SAND SAN BYINVEC
5. TYPE OF WORK check all that apply (Replacement etc.)	1 3/5 232 CLAY
KA MAN MAN THINGOILA STANDARDONNINGS TO OTHER	+ 232 290 SAND FINE MED "YEAR CHIG STATEMENTS
6. DRILL METHOD:	297329 BR. 20574 GREEN + 4284 SYMU
☐ Air Rotdry ☐ Cable ☐ Mud Rotary ☐ Other ★ FUSES S	339 436 COMESE SOME SOME AND GRADE
7. SEALING PROCEDURES	436 444 BAN 1715TH 02A4
Sezi Material Prom To Weight / Volume Saari Placement Method	
CEMENT GROUT O 320 24480 PUMPED FROM	
POTTUM TO TOP	<u></u>
Was drive shoe used?	
Was drive shoe seal tested? DY UN How?	
S CARINDA MED. OF O' : 11'V . " DE NEW FR.	, , , , , , , , , , , , , , , , , , , ,
8. CASING/LINER: 280' /6"X / 3" REDUCE ER.  Dismaler From To Gauge Metarial Casing Liner Walded Threaded	
16 +5 380 875 STEE4 \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	
18 881 345 385 STEEL OF D DE D	
Length of Headpipe Length of Tailpipe	
Packer LIY N Type	7
9. PERFORATIONS/SCREENS PACKER TYPE	
Perforation Method	
Screen Type & Method of Installation TOHNSON (WIRE LOVER)	
From To Stot Size Number Diameter Material Casing Uner	Completed Depth 4/30 (Measurable)
345 425 D30 /2 S.S. B	
	Date: Started 3.31-06 Completed 5-8-06
······································	14. DRILLER'S CERTIFICATION
	i/We certify that all minimum well construction standards were complied with at the lime the rig was removed.
H / (2.4 cm = 10.4 m)	73
	Company Name #1458513F TNC Firm No. 333
1. STATIC WATER LEVEL OR ARTESIAN PRESSURE:	Principal Driller Date 5.42.00
ft. below ground Artesian pressuretb.	and district
Depth flow encounteredft. Describe access port or control devices:ft	Oriller or Oberator II Justin Chrone Dale 5-22 with
FLANGE CAD WI 2-14" PIPE PLUGS	Operator I Date
	Principal Driller and Rig Operator Required.  Operator I must have signature of Driller/Operator II.
	S. LIAA TENN SESSIONANIA

which is a second to the first in the

April 8, 2006

Peter Harris Eaglefield, LLC 6951 Duncan Lane Boise, ID 83714

Subject: Final Design for Eaglefield Well No. 1 (City of Eagle Test Well 4)

Dear Peter:

Drilling of the municipal test well borehole at Eaglefield was completed to approximately 444 feet on April 7, 2006. The borehole is nominal 20-inch diameter and was advanced using the reverse rotary method. The drill cuttings consist primarily of brown sand, tan clay, and brown clay above 438 feet. Blue-gray clay was encountered from 438 to 444 feet.

Geophysical logging was conducted on April 7. Strata Data, Inc. from Casper, Wyoming, was the geophysical contractor. Logs run include natural gamma radiation, spontaneous potential, single point resistivity, 16-inch normal resistivity, and 64-inch normal resistivity.

Drill cuttings and geophysical logs document the presence of a potentially productive sand layer from 330 feet to 433 feet. This sand layer corresponds with the target interval for this well, and we propose completing the well with screens extending from 345 to 425 feet.

The completed well will include 16-inch casing from approximately 5 feet above ground surface to 280 feet, 12-inch casing from 280 feet to 345 feet, 12-inch well screen from 345 feet to 425 feet, and 12-inch tail pipe with plate bottom from 425 feet to 430 feet. A 16-inch by 12-inch welded reducer will be used to connect the 12-inch and 16-inch casing strings. The invert of the 10-inch artesian by-pass line will be approximately 2.5 feet above existing ground surface.

No. 6-9 Colorado Silica Sand filter pack will be installed in the borehole annulus from 320 to 430 feet. Estimated volume is approximately 5 cubic yards.

Bentonite chips will be used as surface seal material. The chips will extend from 320 feet to ground surface. Estimated volume is approximately 34 cubic yards. Prior to installation of casing and screen, the borehole from ground surface to 300 feet will be reamed to 28-inch diameter to facilitate installation of the bentonite surface seal.

We are still discussing well development options with Riverside. Our current thinking is to develop the well initially by bailing, air lifting, or pumping until artesian flow is

achieved. After the initial artesian flow clears, development will continue by shutting in the well, pressurizing the casing with compressed air, and then releasing pressure to allow artesian flow. This procedure can be repeated until the artesian flow clears. Air pressures should start low, and gradually increase up to 100 psi. The artesian flow rate and shut-in pressure following initial development will allow a preliminary determination of well capacity as soon as possible. Final development will be completed using the test pump.

A well design schematic, drill log, and field geophysical logs are enclosed for your records.

Please contact me with any questions.

Sincerely,

Terry M. Scanlan, P.E., P.G.

cc: Terry Daugherty - Riverside, Inc.

Rob Whitney - Idaho Department of Water Resources

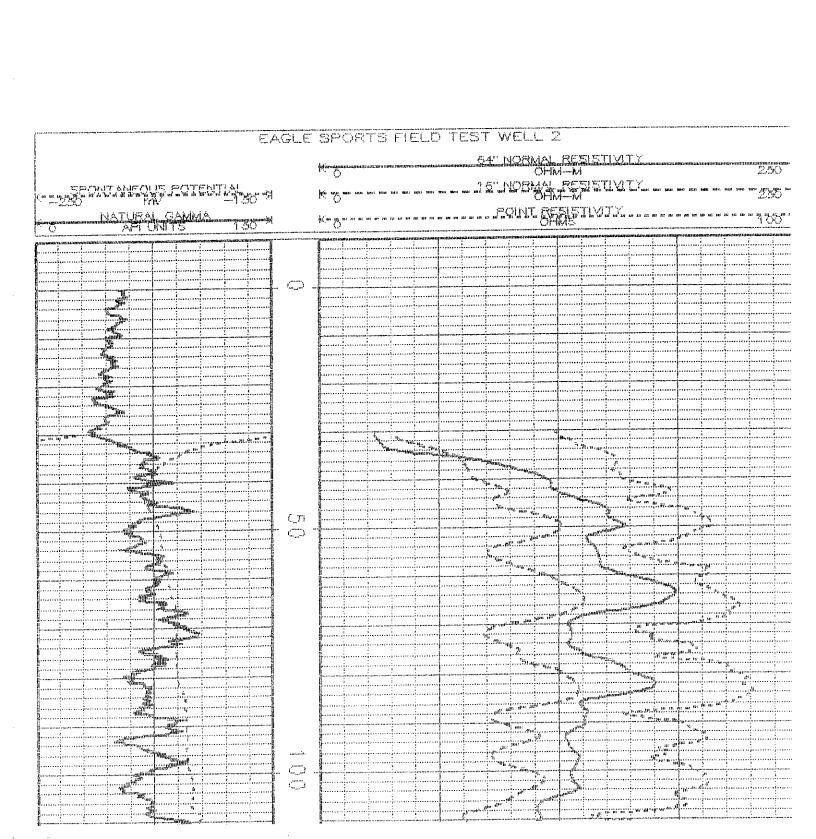
Chris Duncan - Holladay Engineering

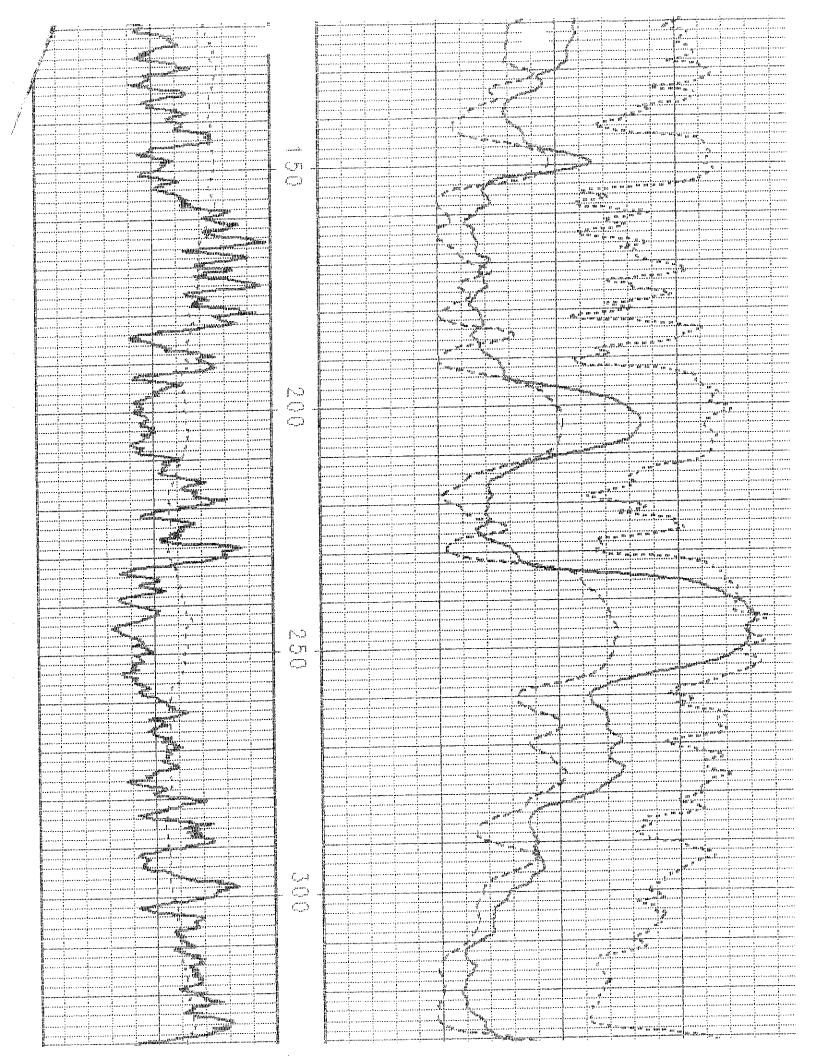
Attachments: Well Schematic

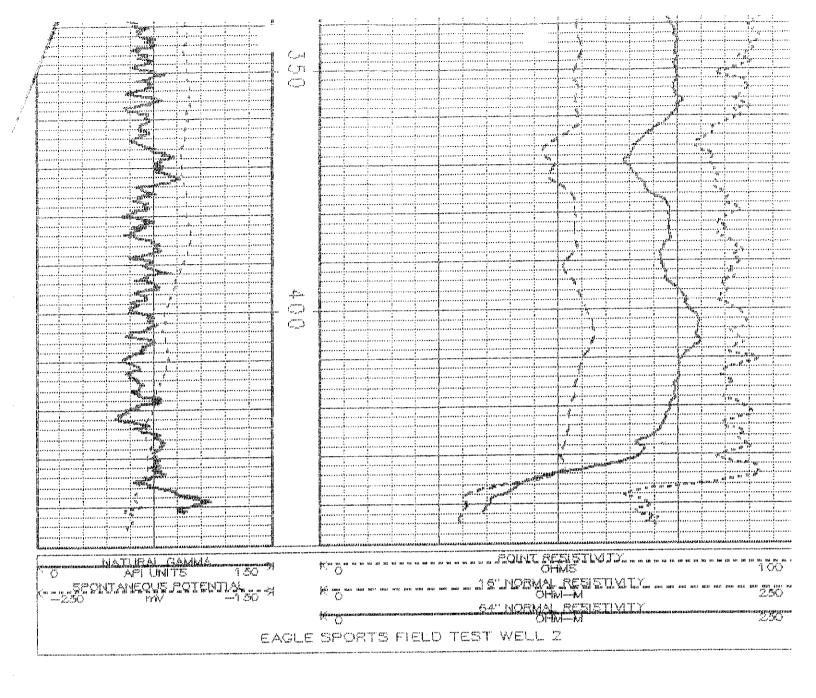
Drill Log

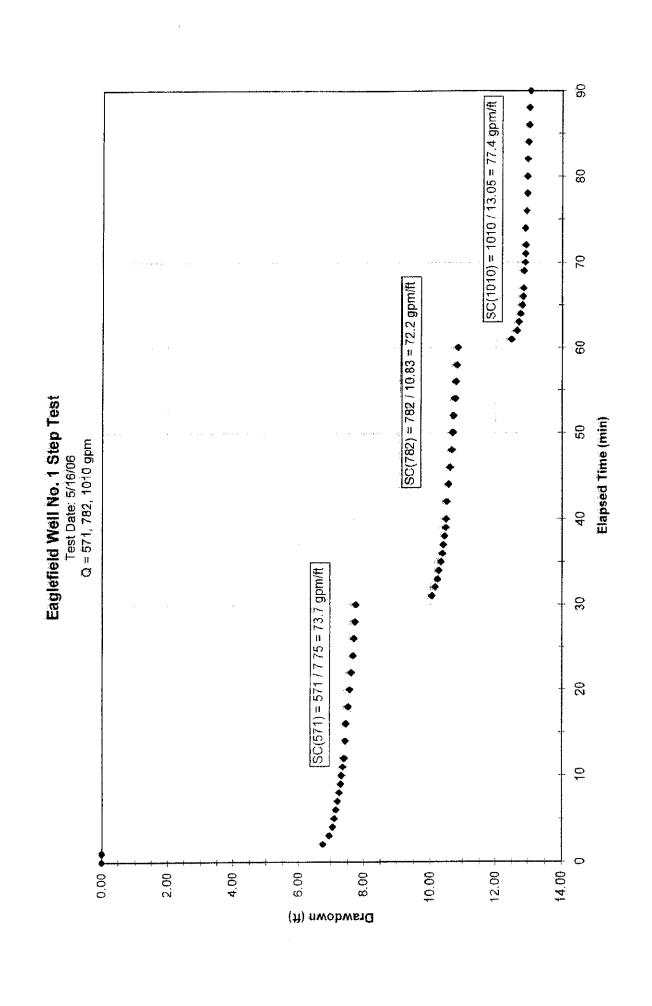
Geophysical Logs

	Water Eng. Jerin water resource cons			
By_ T 5	Date 4/4/00	. Client Eaglefie	[ d Sheet	
Chkd By	Description Fin	al Well Design-	- Eagle Well #4 Job No	421.00
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			10-inch discha	rge@
			+2.5 feet	
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			0/200	1.1
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			M. 80	
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200			, , , , , , ,	
			- bentonite chy seal 0-321	o surt
			3441 0-321	) TEE!
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			-16-incle x 12-inc	
300			reducer at 2:	30 Fee1
			20-inch borehole	300-44
	1		12-inch casing 2	280-34
			12 men cusing -	
			No 1-001 12.	Lin Same
			No. 6-9 Colorado Sil	- 430 fe
100 +	100		12-inch 30-slot w	oell scri
	57,	1.4	345-425 fee tailpipe 425-436	









Eaglefield Well No. 1 Step Test, Q = 571, 782, 1010 gpm Test conducted by: SPF Water Flow measured by: 10x7 orifice, h = 8, 15, 25-inches Water level measured by: manometer, all water levels above ground surface Elapsed Remarks DD (ft) Time Time WL (ft) Date (min) static 18.75 5/16 12:56 0 0.00 open gate valve 13:00 5/16 1 0.00 adjust h=8" 18.75 13:01 5/16 2 6.75 12.00 13:02 5/16 6.95 13:03 11.80 3 5/16 4 7.05 11.70 13:04 5/16 7.10 5 13:05 11.65 5/16 7.15 11.60 6 13:06 5/16 7 7.20 11.55 13:07 5/16 8 7.25 11.50 13:08 5/16 7.30 9 11.45 5/16 13.09 7.32 10 11.43 13:10 5/16 7.36 11 13:11 11.39 5/16 T=16.3, pH=7.44, EC/SC=208.1/244.0 7.40 13:12 11.35 12 5/16 11.32 14 7.43 13:14 5/16 16 7.45 11.30 13:16 5/16 T=15.9, pH=7.46, EC/SC=209.9/246.4 7.52 11.23 18 13:18 5/16 7.56 20 11.19 13:20 5/16 22 7.61 11,14 13:22 5/16 24 7.66 11.09 13:24 5/16 7.69 11.06 26 13:26 5/16 T=16.1, pH=7.45, EC/SC=209.9/246.4 28 7.72 13:28 11.03 5/16 increase h=15" 11.00 30 7.75 13:30 5/16 8.70 31 10.05 13:31 5/16 32 10.15 8.60 13:32 5/16 10.22 33 13:33 8.53 5/16 10.26 34 13:34 8.49 5/16 10.33 8.42 35 13:35 5/16 36 10.37 8.38 13:36 5/16 37 10.40 8.35 13:37 5/16 10.44 38 13:38 8.31 5/16 difficult to read manometer, behind duct 10.47 39 8.28 5/16 13:39 10.48 tape 8.27 40 13:40 5/16 10.50 13:42 8.25 42 5/16 T=16.1, EC/SC=208.8/245.6 10.55 8.20 44 13:44 5/16 8.15 46 10.60 13:46 5/16 48 10.65 8.10 13:48 5/16 50 10.68 8.07 13:50 5/16 52 10.70 8.05 13:52 5/16 T=16.0, pH=7.38, EC/SC=208.2/245.4 10.75 54 13:54 8.00 5/16 1077 7.98 56 5/16 13:56 T=16.0, pH=7.37, EC/SC=208.0/244.9 10.80 7.95 58 13:58 5/16 10.83 60 7.92 14:00 5/16 increase h=25" 61 12.47 14:01 6.28 5/16 62 12.64 6.11 14:02 5/16

Date	Time	WL (ft)	Elapsed Time (min)	DD (ft)	Remarks
5/16	14:03	6.05	63	12.70	
5/16	14:04	6.00	64	12.75	
5/16	14:05	5.94	65	12.81	
5/16	14:06	5.92	66	12,83	
5/16	14:07	5.90	67	12.85	check on flow along discharge channel,
5/16	14:09	5.89	69	12.86	mised reading
5/16	14:10	5.85	70	12.90	adjust gate valve couple of turns
5/16	14:11	5.84	71	12.91	
5/16	14:12	5.83	72	12.92	
5/16	14:14	5.85	74	12.90	T=16.0, pH=7.43, EC/SC=208.6/245.6
5/16	14:16	5.81	76	12.94	
5/16	14:18	5.79	78	12.96	
5/16	14:20	5.79	80	12.96	T=16.0, pH=7.42, EC/SC=208.7/245.7
5/16	14:22	5.78	82	12.97	
5/16	14:24	5.75	.84	13.00	
5/16	14:26	5.73	86	13.02	
5/16	14:28	5.73	88	13.02	
5/16	14:30	5.70	90	13.05	closed gate valve

.

TEST WELL N. 2 (EAGLEFIED) Pumping Well ENGLE 7-DAY AQUITER TEST +18 -SIGHT TUBE 11/2" MOTOR Suppose ROD HAND MEASUREMENT M.P. TOP OF PLATE 811 GATE VALE M.P. OF TEMULUCER OIZBET TOP PLATE EL 10" ARTESILL DISCHARGE GATE VALUE 3.25 FT LS. SURVEY POINT: LAND SUBFICE ON NORTH SIDE OF CASING 109. 20 FT Roup LINE SHAT TURLANE FUMP Accombly - 1" PVC Sounder Tube 4 Temps duck 109.20 ET DEPTH POFT APPROX. (CUT) OF PUC PIPE FUMP 5.5 -INTAKE DEPTH below Lis. = 111.22 F

100 Sept. 1

TEST WELL 1 (Legacy)

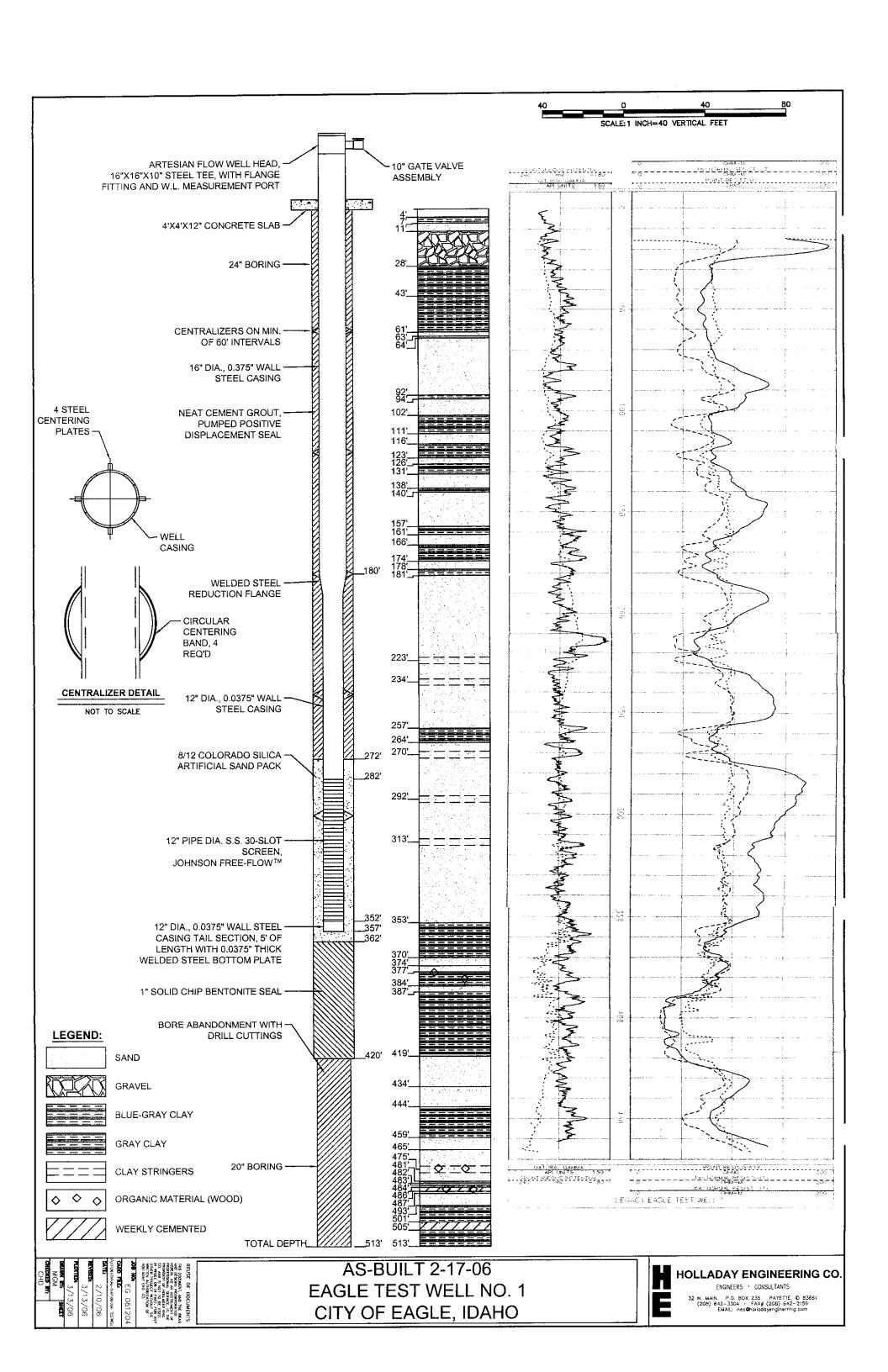
Form 238-7

## IDAHO DEPARTMENT OF WATER RESOURCES WELL DRILLER'S REPORT

orm 238-7	IDAHO DEPARTIV	ENIOP WATER RESC		,			Inspe	cted by			
/02	WELL D	RILLER'S REPORT					Twp	Age	Sec	ــــــــــــــــــــــــــــــــــــــ	1
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ity	P. D. BOX 1520	State TD Zip 836/6							Bottom ho	le temp.	
									-	_	
i. LOCATIO	N OF WELL by legal description	in: LEGACY WELL#1	Water	r Quality	Test or	comments:			\al-a I	Cassustay	
מסי must provid	e address or Lot, Blk. Sub. or Direct	South D						Depth t			
wp	North <b>X</b> or East □ or	West 🎾	13. L	ITHOL	OGIC I	LOG: (Desci	ribe repr	irs or abando	nment)	<u>w</u>	ater
ide 📝 .	1/4 SE 1/4	N W 1/4	Roth	From	Ть	Remarks:	Lithology	, Water Quality	& Tempera	ture Y	N
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	l long!	<del></del>	24	<u>_</u>		707 S	0/4				
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4. USE:	i 8. Elektroleinal DiMonii	or 🖵 krigation	Ц	12	22	SAND		···········		<del></del>	
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∏ Therma	i — injection — 🗯 — injection							N CLAY		9725	
TYPE OF	WORK check all that apply	(Replacement etc.)		166	174	CLAY			<u> </u>		
New Well	Modify Abandonme	ant Other				SAND					
****	:			178	181	CLAY					
6. DRILL MI	ETHOD:	Was Desite As a		18/	183	SAND	<u>, Cla</u>	24_5TR	EAX 5_	<del></del>	-
🖺 Air Røl	ery 🗆 Cable 🗀 Mud Rosa	ary Dother REVERSE		/83	257	SAND				<del></del>	+
				257	264	coy				<del></del>	<del></del>
	PROCEDURES	Volume Seal Placement Methed		265	274	SAND	<u>~/</u>	Ay ST	PLAKS.		
Seal Ma	iterial From To Weight /	PUBLIC DONNER	20			SAND					-
CEMENT	GROUT U WA AY	GEAL PLIMPED BOTTON TO!	يلا			BLUE					-
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Was drive shot			20	384	(387	SAND	-	<del></del>			
	seal tested? DY N How?							ay cua	<u>:</u> y	<del></del>	
R CASING	INER: /6" V 19" PED	LICER (2) /80° 70 /81° Carlog Liner Wolded Threader		419	444	SAND	<u> </u>	· · · · · ·			
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Length of Hea	dpipeLength	of Talipipe	<u> </u>	503		BLUE	C/	ay_cl	<del>ay</del>	<del></del>	
Packer 🖂					<u> </u>			· •			
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	ATIONS/SCREENS PACKER T	YPE			<u> </u>	_FROD_		TO S	<u>'3' ω</u>		-
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		Material Caring Liner	·			.]	~~	77		() 10 00	urabie)
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	THE PROPERTY OF A PETCHALL	DDEORIDE:	Prin	iolpal Di	ومسمناه إا	M	1	sul_	Date	5-1	<u> </u>
	WATER LEVEL OR ARTESIAN	PHE33UKE:	and	١ .	and the same		1				
	dw ground Artesian pressur	eID. ess port or control devices;			serator*	T-1-	/-/	[]	Date _		
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	·					perator i must	have sig	malure of Drille	or/Operator	lt.	
	.	FORWARD WHITE COP	∨ TO \	WATER	PESO	URCES					

Office Use Only

Well ID No.



### GEG ECHNICAL BOREHOLE LOG

HOLLADAY ENGINEERING COMPANY

<b>3</b> 0REF	HOLE ID:	JEST We	LL No.1 PROJECT NO	) E/- (	361204		DACE:	
		~~~						
OLLA	R EL:	E:CITY OF E WR 61-32 WR CI-32	NORTHING:	EAGLE	, <del>=</del> 0	,	EASTING:	DN: <b>5E, NW, S. 11</b> , T. 4W,
OLE I	DIAMET:	ER: <b>18", 26</b> "	DRILL METE		ERSE PLT			
RILLE	R: Rive	rside , IJ	C. LOGGER: C.	D. LR	Verside , Tlef has	TWC. H)	STATIC WATE	R DEPTH:
Depth (ft)	Date Time	Induration & Color	Soil or Rock Description	Graph Log	Sample format	Blows (N)	%Moisture water level	Fracture Density, Drill Notes, Gen Comment
<b>&gt;-4</b>	1/20/0	6 Med-DK Brown	LOAM SOIL . Appropr. 46, SILT, 30% 54ND, 20% CLAY AND 10% OFFICE		Flow Discharge		المصلحا تناف	MUD 9/3 MIX, Barand 18" BIT, WASHED SAMPLE 8165. MUD (DILLER)
<b>!-</b> 7	1/20/0	DK. Bran	SILTY CLAY, Approx 40% SILT, 50% CLAY 10% SOUD. SOPT	3-3-	Geab, Reverse Final Discharge	9	UNKANAMA	wasted Sample
-11	1/23:/04	Tauntah -	SLITY SAUD. Approx 25765LLT END BOYS V, FIME TO COGTES SAUD GEAUTTIC.		Grab, Reverse Flow Discharge		Chokyman	worked Sample
- 13	1/23/06	Thunish-	SANDY GRAVEL. APPROX. SOTO FINE - V. COURSE SAND 40% FINE - COURSE GRAVEL AND 10% BOBBLE ANQUEST TOWER ROMANDED.	0.00	Grab, Remerse Flow Discharge	•	Colciloral	DIFFICUATIONAL, BIT BOUCE, WAShed SAMPLE, BOTTON ENLAMPEMENT, COLLE SOLUMING
-18	1/23/06	JEAN JEAN	BANDY GRAVEL. Approx. 360% Med-V. CONTO. SAND. HOMO FC. GRAVE. 20% Cabble, Well Round GRAVITIC.		Grab, Renerse Fland Discharge		Cuttalound	Drick Total Source Slow Driking, WASKED SAMPLE, BOTTUS ELATESMENT.
-28	1   24 -0	Trumsh- 9 say	SAMPY GRAVEL, APPROX. 60% MCd-VICCORTSC SOUD 40% FC. GRAVE MINOR COMMED. WILL ROUM GRAVETIC.	0.	GENL, REVERSE Flow Discharge		1	Washes Sample Boring Enlargement,
3-43	1/24/06	TAN	Sandy Sidy Clay. Appa 10% Fine Saud, 30% Silt and 60% Clay. Sticky, Good Ribbant.	11.11.1	Grab, Reverse Flow Discharge		المسلمانيان	Washed Sample
- <b>60</b>	1 zsjoc	TAA	SILTY CLAY HAPPING. 307- BUT TOND TOYO CLAY, GOOD RIBBON.		GRALD, REVERSE Figual Distribution		UNKALOWA	20"BIT AT 53 FT, WASHED SAMPLE
- <b>6</b> 3	ااعدامد	Tall	Clayey SANDY SILT. Approx. 15% Clay, 20% FURSAND AND 65% CLAY. STICKY Good Ribbon.		Genl, Revenue Flori Pischarte		UNKdowd	Washed Sample
3- <del>41</del>	1/26/06	oratogish- Taul	SICTY CLAY. Approx. 30% SILTAND 70% CLAY. STICKY, Earl	==	Gent, Reverse Flow Discharge		Unacharand	Washed Sample

# GEOTECHNICAL BOREHOLE LOG HOLLADAY ENGINEERING COMPANY

<b>B</b> ORE!	HOLE ID:	EAGLE TEST	Well Hand PROJECT NO	D.: <b>E<i>b</i> o</b>	61204		PAGE: <b>2</b>	of6
PROJE	CT NAM	E CATY OF	DOCK HON,	QUATTER	Crele b	. <b>T</b> . :		DN:5E,NW_S.11,7.44,1
COLLA	R EL:	WR 65 -3	NORTHING:	• - /	EMIE, T		EASTING:	777
HOLE I	DIAMETI	ER: <b>18",20"</b>	DRILL METH	HOD: <b>Kev</b>	erse Pot			JED-A
-		RSIDE, JAC	LOGGER: 🗘	MUI D. + RIVE CJ	-	Nc. s		ER DEPTH:
Depth (ft)	Date Time	Induration & Color	Soil or Rock Description	Graph Log	Sample format	Blows (N)	%Moisture water level	Fracture Density, Drill Notes, Gen Comment
64-72	2 Izula	TAN	SILTY CLAY, APPROX, 30% SILT AND 70% CLAY, STICKY & COOL RIBBOA,		Grad, Reverse Flow Discharge		Outriorad	Washed Sample
12-74	1/27/00	Thumish-	SILTY SAUD. Appropriate Sold Silthaus 70% Fine-inter. Sauld. Proprint Sauld. Granitics.		GRAB, REVERSE Flow! Discharge		سادياسما	WHINED SAMPLE, MUDTESTED AT 9 Ibs. MIX.
74-92	1127/06	Tannish -	SAND, FINETTS CORTSL GRANED, WHALLSOTTED, GRANITIC,		GRAL, REVERSE Flaw bischary		Carendary	WASHED SAMPLE
72-94 	1/27/06	Tind	SILTY CLAY. Approx, 50% SILT and 50% Clay. STICKY, mad, Ribbal.		GRAS, REMERSE Fland Discharge	_	Crokypery	WASHED SAMPLE
14-102	1/27/06	Thunish -	SAND, FINC TO COMPLE GRAINED, Wall Softed, Granitic		Grab, Reverse Flow Discharge	L	لمصلمحمن	Washed Sample
02-104	1]27]64	Taul	SILTY CLAY. APPROX., 60% SICT AND 40% CLAY. MOD, RIBBAN. STICKY.		Grab, Reverse Flow Discharge	L.	טטאטטא	WASHED SAMPLE
D4-169	1 27 06.	TAN	SILTY CLAY, Approx. 40% Silt and Logs Clay, Good Ribbon, Sticky.		Geal, Reudese Flow Discharge		UUKNOW	Washed Sample.
9-III	1 27 06	Tad	CLAYEY SILT. Approx, 20% CLAY AND 70% SILT, POOF- AD RIDDA		GRAS, RONGRESS Flow Discharge		Contribution	WASHED SAMPLE,
11-116	1127/06	Thurish - grey	SAND. FINE - J. COMPSE GLANED, GRANITIC,		Grab, Reværse Flow Discharge		Contract	Washed Sample.
6-123	1/27/06	TAU	CLAY, Approx. 20%. SILTAND BOTO CLAY. STICKY. Good RIBBON,		CEAL, REVECSE TAW Discharie		لمسطلتانين	Washed Sample.

# GEO LECHNICAL BOREHOLE LOG HOLLADAY ENGINEERING COMPANY



BOREHOLE ID: EAULE TEST WELL No. 1	PROJECT NO.: Eschizo4	PAGE: 3	of <b>6</b>
PROJECT NAME: CITY OF EAGLE	LOCATION: QUALTER CIPELE D.T.	SITE LOCATION:	1, NW S. 11, T, 44 R. 14
WR 63-32089 WR 63-32090	NORTHING:	EASTING:	
HOLE DIAMETER: 18", 20"	DRILL METHOD: REVERSE ROTATY MUD	DRILL MODEL:	ZED-A

Depth (ft)	Date Time	Induration & Color	Soil or Rock Description	Graph Log	Sample format	Blows (N)	%Moisture water level	Fracture Density, Drill Notes, Gen Comment
123-126	1/21/06	Townsh-	SAND, FINE TO VI CORTSE SAND, WELL SOUTH, GRANTIC,		Gent, Reference Flow Discharge		Urzkalewal	Whalfo Sumple,
124-13)	1/27/06	THA	SILTY CLAY. APPROX. SOME SIGTAMS SOME CLAY. STICKY. Good Ribbon.		Crab, Reverse Flow Discharge	4.	UNKNOW	Washed Sample.
31-134	1/27/06	Tanvish- gray	SAND, FINE TO COATSE GRANGED, GRANTIC.		GRAL, RENEESE Flow DISCARRY		Unskerand	washed Sample.
134-140	비피스	Taul	SILTY CLAY, Approx, 60% SILT and 40% CLAY, Mad. Ribbon. STICKY,		Gend, Reubese Flow Dischar	×.	كالاساميما	washed Sample.
140-157	1/27/06	Thuuish-	SAND, FINE-COMPE GRANDED, GRANITIC		Geal, Reverse Pana Dischary	•	CUKUAIAA	CHASHED SAMPLE.
157-161	1/28/06	Tax	SILTY CLAY Approx. 5:0% SILT and 5:0% CLAY, SET, STICKY Good RILDEN.		Grab, Beleese Flow Discharge	•	UNKEROLON	Washed Sample.
161-166	1/28/06	Tanish -	SAND. FINE TRIPOGRESS WELL SOTTED , GRANITIC .		GRAB, REHERSE Flow Discharge		ONKNOWY	Washed Sample.
166-174	1 28 04	Tail	CLAY, AMPTON, 30% NO TO % CLAY. SOFT STICKY, GOOD RIBBOA.	=======================================	GRAD, RENEXAE Fland DISCHARGE	•	CNKNowy	Washed Sample,
74-IBI	1/25/06	Tad	SHIDDY SILTY CLAY, APPROX, 10% SILTY CLAY, 30% SILT AND 60% CLAY, SOFT, STICKY, MED, RIBBON.		Grab, Roverse Flow Discharge		UNKNAUN	Washed Sample_
81-191	1/28/06	Tanish - gray	SILTY CLAYEY SAND. APPROX. 10% CLAY, 3.0% SILT AND 60% SAND, WIFFINETO COORDE, POOTH SOTTED.		Grab, REVERSE Flow Discharge		Oukaowa	Wasted Sample,

### GEOTECHNICAL BOREHOLE LOG

#### HOLLADAY ENGINEERING COMPANY

BOREHO	LE ID:	EAGLE TEST	WELL No. 1	PROJECT NO.:	: E600	61204	P.	AGE: 4	of6
PROJECT COLLAR	של	CN OF EAR 63-3208 R 63-3209	9	LOCATION: _C		Circle D.T		ITE LOCATIO	N: SE, NW, S. 11, T. 4N.R.
		R: <u> 8", 22</u> (B;†)	>"	DRILL METHO		SE ROTAL			: <u>Jed</u> -A
		(BIT) ISIDE, TWO		LOGGER: <u>८.६</u>	s, & Rue		<b>.,</b> S		
Depth (ft)	Date Time	Induration & Color	Soil or Ro	ock Description	Graph Log	Sample format	Blows (N)	%Moisture water level	Fracture Density, Drill Notes, Gen Comment
191-203	1/28/06	Taunish -		FINE TO COADS . MOD. SOITED C.		Grab, Reverse Flow Discharge	_	UNKNOWN	Washed Sample.
203 - 221	i zg a6	Tannish - Gray	APPROX.	cry Saub, 0% clay, 70% to 70% U. Five Samb, Poorly	1	GRAS, RENESSE Flow Discharge		UNKNOWN	WASHES SAMPLE.
22 -273	1/28/06	TAN	60% 5.	itay, Approx, it and to % ind, Ribban		GRAD, REVERSE Flaw Discharge		ואאאסיביץ	WATHER SIMPLE. NOTE: REPORT AS STRUGARS, BASEWAN Dr. LL RATE.
225 - 257	1/26/06	TENNISH -	924145b	Fire To MED. Sawb, well Sub auquiar, C.		GRAL, REVERSE Flow Discharge		Mknomy	WASHED SAMPLE, NOTE: CLAY STINGER AT 234 PT. REPORTED by Driver,
257-244	1/28/06	LIAT	SILT AND A	90% CLAN.		GRAD, REVERSE Flow Discharge	-	บเบเหม่อนาม	Washes Sample Hote: Sand Stringer Remarks by Driller At 260 ft.
204-320	1/28/06	TAUNISH -	924,050	. Five to MBb, . Well sotted, Mat, Gran Mc		GRALL, REVERSE Flow Discharge		UNKALOA	WASHED SAMPLE, NOTE: CLUY STILLYER REPORTED by Driller AT 292 PT. HUD 313 FT.
320-353	1/30/06	Tamish- gray	SILTY SI 200/0 SVI V. FINE TO	RADINGTO AND APPROX. IT AND 80% o med. Saud. IY SOTTED.		GRAD, REVERSE Flow Discharge		UNKNOCON	Washed Sample,
353-374	عدامدا ا	BLUC- GRAY	Approxim & SAND, 20 GO % CL	LTY CLAY. LO % U.F.UE  - % SILT AUD  AY. SOFT.  ORTED. GRANTIC		CELL, REVERSE Flow Discharge		UNKNOWA	washed Sample,
370-377	1/30/06	TANNISH - GRAY	SILTY SA CLAY, 267 V. Five To	ND. APPROX. 16% 65.LT LUB 70% COOKSESAUD. TED. GRANTIC,		GRAD, REVERSE Flow Discharge		הארישיין	Was HED SAMPLE, 9.0165 MUD (DRILLER)
ZT1-384	1/30/06	BLUE-	FIRSOND CLA	TY CLAY. 70 No FINC TOO 20 % SILT AND Y. SOFT, STICKY , 5% CATOM WOOD	<u>v</u> - <u>v</u>	Grad, Reverse Flow Discharge		unkdowd	Washed Sample.

C:\GEO\GEOTKDRL.LOG

### GEO1 LCHNICAL BOREHOLE LOG

#### HOLLADAY ENGINEERING COMPANY

<b>3</b> OREHO	DLE ID: <b>E</b>	AGLE TEST	WELL NO. I PROJECT NO.	EG 00	1204	P	AGE: <b>5</b>	of <b>6</b>
PROJECT	NAME:	CITY OF EAR	LOCATION: 4	UAPTER C	ITELE D. 3	<b>r.</b> S	ITE LOCATIO	N: 55, NW, S. 11, T. 4W, R
COLLAR	EL:	R 63-3208	NORTHING:					•
iole di	AMETEI	R:  8", 2ッ" ( <b>8:</b> T)	DRILL METH	OD: <b>Reve</b>	ISE ROTATY	MUD D	RILL MODEL	
			LOGGER: C.T	Z & RIVE	SIDE THE	<b>s.</b> S	TATIC WATE	R DEPTH:
Depth (ft)	Date Time	Induration & Color	Soil or Rock Description	Graph Log	Sample format	Blows (N)	%Moisture water level	Fracture Density, Drill Notes, Gen Comment
384-387	1 30 06	Taurish- gray	SAND. Approx, 90% V. Fine to Med. Sandand 10% GILT, Well SAITED. GRANITIC,		Grab, Revenue Flow Discharge		אינייפניאאריני	WASHED SAMPLE,
387-419	1/30/06	Bue-	CLAY. Approx 20% CLAY AND 20% SILT. SOFT. Good Ribbon.		GEAL, REVERSE Flow Dischary	-	المرامليانين	Washed Sample.
419-43 <del>4</del>	1/30/66	LT, GRAY	SAND. Approx, 15% SILT AND V. FINE TO V. CORFSE SAND, MINOR PERSONAL, MOD. SOFTED.		GRALD, RENERSE Flow Dischary		Mikylowy	washed sample.
434- <del>144</del>	1 3= 06	LT, GRAY	CLAYEY SI DY SAND, PIPPIDA . 20% CLAY , 40% SILT AND 40% V.FINE TO MED, SAND , POORTY GOTTED		GRAB, REVERSE How Discharge		لديدودينالدن	Washed Sample,
144- <b>457</b>	1 30 06	Blue -	SILTY CLAY. APPROX. 60% SILT AND HOYO CLAY. SOFT. Mod., RILDON.		Geal, Reverse Floud Discharge		UNKUDUM	WASHED SAMPLE.
159-465	1/30/06	Geny	CLAYEY SILTY SAND. APPROX. 10% CLAY, 20% SILT AND 70% V. FINE TO MED. SAND, POORY SOITED.		GRAG, REVERSE Flow Discharge		Unknown	WASHED SAMPLE. STOPPED Drilling by Bugineet,
-165-481	1131/06	LT, Gray	SAND, FINE TOMED, MAND, WILL SOTTED, GRANITIC, CLAYSTING 6"AT 475". CADONIZED WOOD (475-480").		CEAD, REVERSE Flowl Discharge	•	UNKNOWN	WASHED SAMPLE. PESCHED Druing by Engineer, Mub 9,7 lbs (briuse)
18/-482	!   31   ~ C	BLUE - GRAY	SILTY Clay, Approx. 60% SILT AND 40% Clay. SOFT, Good Ribbon,		GRAG, REVERSE Flow Discharge		لمناطب	Washed Sample.
182-483	1 31 -6	LT, Gray	CLAYEY SICT SAND. APPEAL 10% CLAY, 20% SICT AND 60% FINC TO COOKE SAND PROPRY SOFTED, CAPLONIZED WOOD FINE.		Grab, Roverse Flow Discharge	•	UNKUDEON	WASHED SAMPLE.
63-484	1/31/06	Blue -	SILTY CLAY . Approx. 40% SILT AND 60% CLAY, 5-10% CARDONIZED Wood Frag.		GRAD, RENERIE Flow Discharge		UNKNOWN	WMHED SAMPLE.

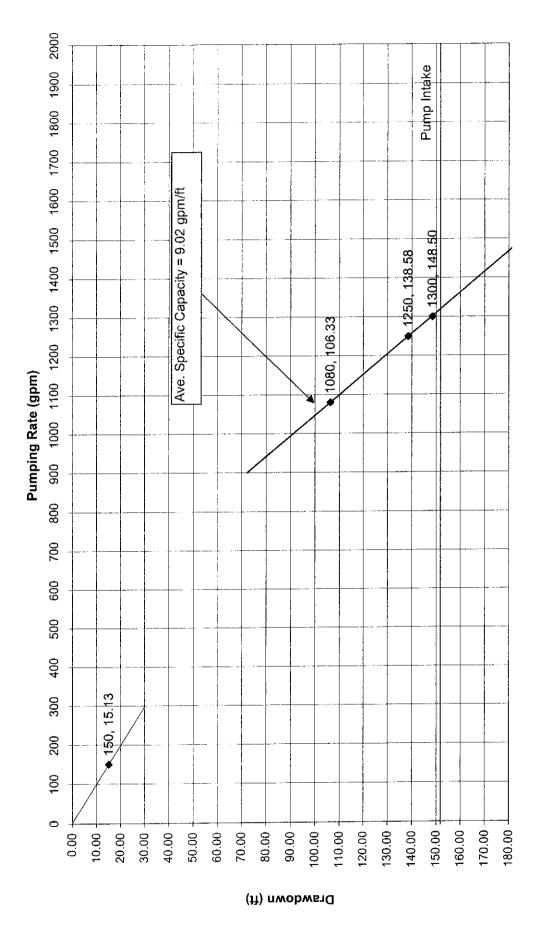
### GEOTECHNICAL BOREHOLE LOG

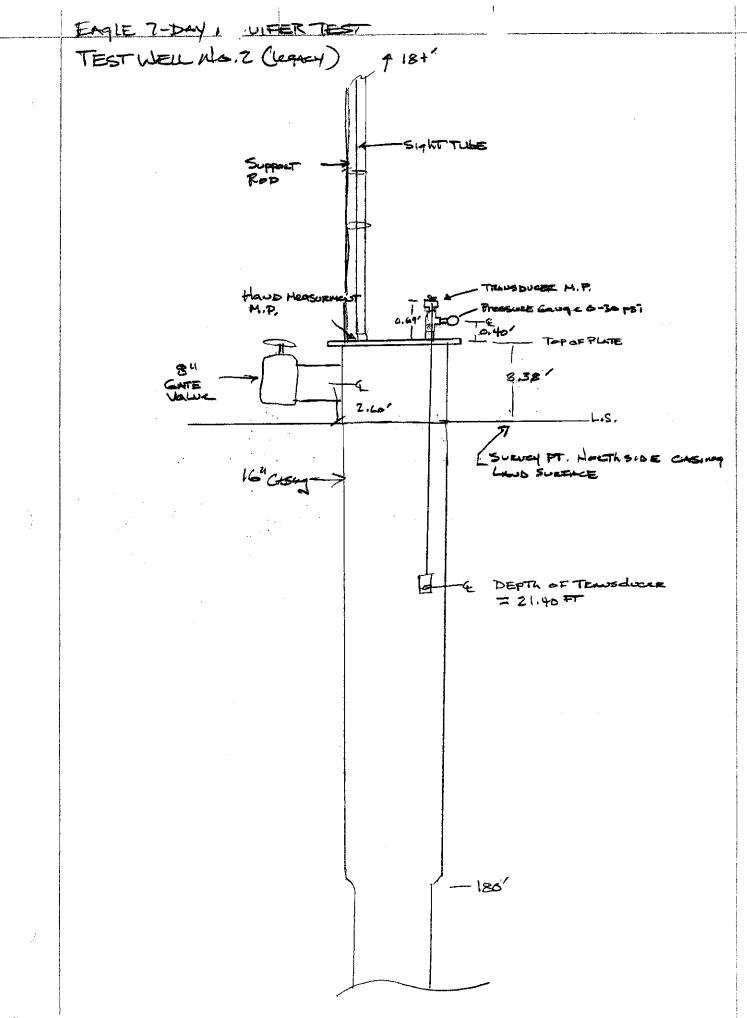
#### HOLLADAY ENGINEERING COMPANY

BOREHO	DLE ID:	ENGLE TEST	WELL NO.   PROJECT NO	EGO	61204	F	PAGE: <b>6</b>	of6
PROJECT	NAME W	CITY OF E	AGLE LOCATION:	PUARTER RANCH	CIRLE D.J	<u>:</u> S	SITE LOCATIO	N. SE, NW, S. 11, T. 4N, R.
COLLAR	EL:	JR 63-320	ر اه			E	easting:	
HOLE DI	AMETE	(R: 18", 20	" DRILL METH	(OD: <b>Reve</b>	ESE ROTATY	HUD I	ORILL MODEL	TED-A
		ESIDE, IN		D. FRIVE	ESIDE IN C	<u></u> S	TATIC WATE	R DEPTH:
Depth (ft)	Date Time	Induration & Color	Soil or Rock Description	Graph Log	Sample format	Blows (N)	%Moisture water level	Fracture Density, Drill Notes, Gen Comment
484-486	1 3  00	LT. GRAY	SAND. FINE-MED, SAND, WCLLSOFTED, WCAKIY CEMENTED CAMBONITE? WCLLSOFTED GRANTIC, DITYSED, FEA, CARBONITED WOOD. FRANG.		REVERSE Flow Discharge		UNKALOWA	WASHED SAMPLE, HARDER DILLING.
486-487	1/31/06	Blue - geny	CLAY, SOFT. STICKY. Good RILLON.		GRAD, REVERSE Flow Discharge		UNKNOWY	Washed Sample.
487-4 <b>8</b> 7	1/31/06	LT. GRAY	SAND, MED. TO CONS. SAND AND MINER FINE. SAND. WUISOFTED. GEANTIE,		GRAD, REIERSE ROW DISCHARGE	-	UNKALINA	Washed Sample.
<del>489</del> -493	1 31 06	LT. Gray	SAND, MED, TO VICENTEE SAND AND 10 % PALLES. SUBJANGULAR, MOD. SORTED, GRANITIC,		GRAL, REUBESE Flow DISCHARGE		الا صحاحات ال	Washed Sample.
493-501	1/31/06	DK.GEN To Blue-gany	CLAY . STIFF, Good RIBBON . GENDING IN COLOR FROM DK. GRAY TO BLUE-GRAY.	  	GRAB, RENERSE Flaw Discharge	•	ONKHOWA	WASHED SAMPLE. Drive Rig Bowice.
501-505	1/31/06	Whenk Blue-Jewy To Gray	Changey SICTY SAND. APPROX. 10%. CLMY, \$10%. SICT, AND V. FINE TO FINE SAND. POOTY SCHOOL WEAKLY CEMENTED CALANATE		GRAD, REMERSE Flow Discharge		บผหปอพป	WASHED SAMPLE. Harden Brilling.
505-513	1/51/06	Blue - GRAY	CLAY, Mod. STIFF. STICKY. Good RILLOW.		GRAD, REVERSE Flow Discharge		עטאאפטע	WASHED SAMPLE, T.D. 513' ENGINEER STOPPED Drilling,
						-		
						<del></del>		

C:\GEO\GEOTKDRL.LOG

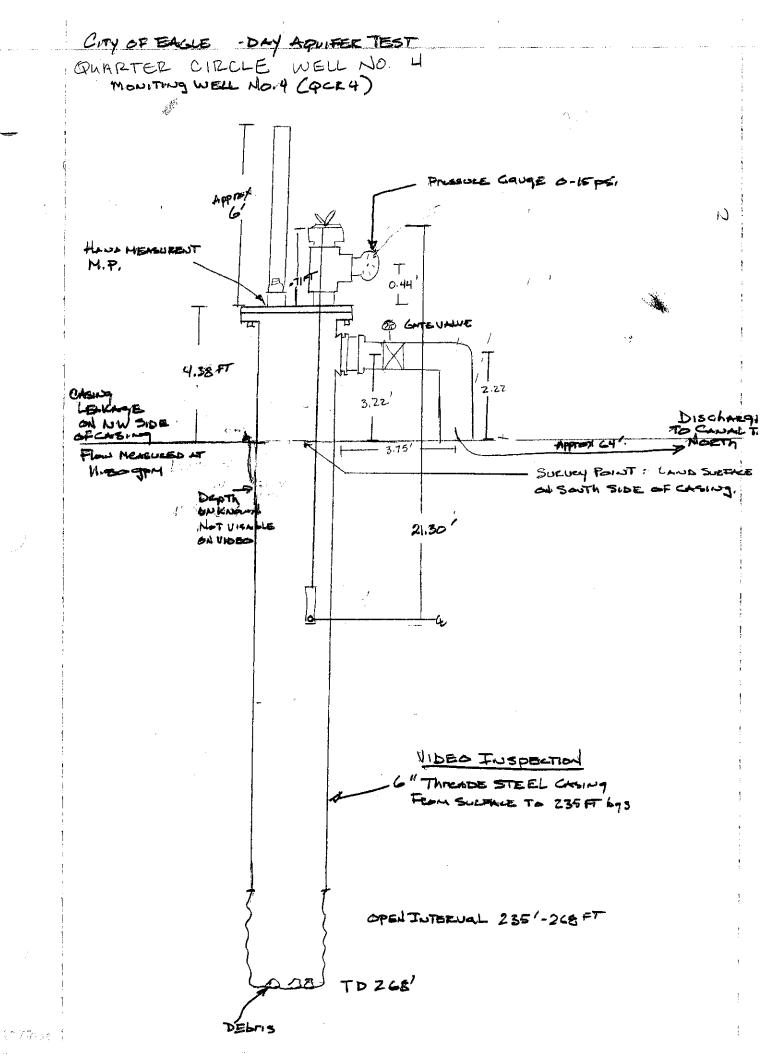
STEP PUMP TEST of TEST WELL No.1 (Legacy)
March 24th 9:15am to 2:30 pm
Specific Capacity



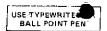


Whar.

MONITORING WELL 4 (QCR 4)



MONITORING WELL 6 (Rick's)

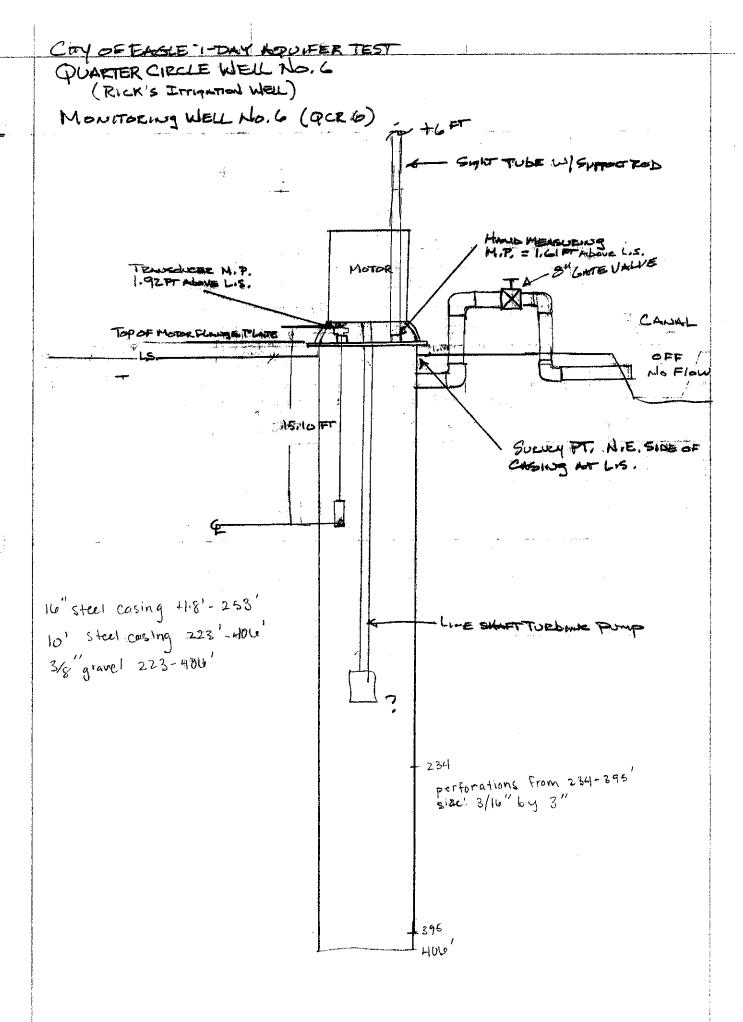






### WELL DRILLER'S REPORT State law requires that this report be filed with the Director, Department of Water Administration within 30

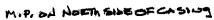
days after the completion of	or apant	oonman	t of the			-	·-	
1. WELL OWNER	7.	WATER	LEVEL	Liepatin, L	 			
Name Courter Circle D.J. Ranch		Static u	ratec love	d foot bolous land -		``^		
		Static water level feet below land surface Flowing? No G.P.M. flow						
Address Ster, Idaho (Home Place)	1	Temperature F. Quality						
Owner's Permit No.	Artesian closed-in pressurep.s.i. Controlled by A Valve Cap Plug							
2. NATURE OF WORK	8. 1	NELL 1	EST DA	ITA				
New well	Ι,	🗆 Քսուր		□ Bailer □ Other			•	
, , , , , , , , , , , , , , , , , , , ,	L	Discharge		☐ Bailer ☐ Other				
Abandoned (describe method of abandoning)								
	<u> </u>			<del></del>	ļ <u>.</u>			
3. PROPOSED USE							_	
. □ Domestic, ② irrigation □ Test □ Other (specify type)		ITHO	LOGIC L	00	4005	5		
:	Hole		pth	.06			oto:	
Injection Linearity Linearity	Diam.	From		Material		_	No	
4. METHOD DRILLED	16"	- 0	3	Top Soil		ļ	À	
<b>.</b>	<del>  "</del>	12	27	light clay and se		X	┿	
A Cable ☐ Rotory ☐ Dug ☐ Other	11	27	105	Fine sand, some o			X	
5. WELL CONSTRUCTION	11	105	240	Sand with clay bi	nder	X	V	
	P1	240	260 295	Sticky Brown clay Sand, some small		×	X	
Diameter of hole 16 inches Total depth 406 feet Casing schedule: Na Steel Concrete			-69	of clay	auyers -	×		
Thickness Diameter From To		295	318	Sticky brown clay		X	X	
250 inches 16 inches 118" feet 253 feet		318	380.	Sand, some small of clay	layers	X	-	
250 inches 10 inches 223 feet 406 feet inches inches feet feet feet	11	380	404	Sand, some clay		X		
inches feet feet	<del>-</del>	404	406	Sticky light brown	1_clay		X	
inches feet feet							[—	
Was a packer or seal used? ☐ Yes 52 No				Gravel pack				
Perforated?				30 yds. of 3/8 mir	us grave	1		
How perforated? A Factory C Knife C Torch			$\neg \neg$	10" shoe on top of	linen	-		
Size of perforation 2/16 inches by 3 inches  Number From To		1		15" shoe on bottom	of line			
5,152 perforations 234 feet 395 feet								
perforations feet feet feet								
periorations reet reet								
Well screen installed? ☐ Yes 🖎 No							—	
Manufacturer's name	NE	T I	FST/	ED AS OF	130/14		<u> </u>	
Diameter Slot size Set from feet to feet								
Diameter Slot size Set from feet to feet								
Gravel packed? St Yes   No Size of gravel 3/8 minus							_	
Placed from 223 feet to 406 feet							_	
Surface seal depth 22 Material used in seal III Cement grout								
☐ Paddling clay ☐ Well cuttings	+					$\dashv$		
Seeling procedure used 🔲 Silerry pit 🛍 Temporary surface coming							ᅱ	
Overbore to seel depth								
6. LOCATION OF WELL	. 10		ed <i>Za</i>	1. 28/73 finished	201 31	73	;	
Sketch map location must agree with written location.	,,,,		4/12	TIMSTED Z	e ventry.			
N .	U Ne	W CERO	CERTIE	,				
				CERTIFICATION V. TR. CHARLES OF THE CONTROL OF THE				
Subdivision Name	Address 3709 Hawthorn Drive Date 10/30/73 Skoned by (Firm Official)							
Lot No Block No						.		
DOWN TWO								
8	310	няти бу	10 mus) bho	HOUR TO THE CONTRACT OF THE CO	ix flet	-	۱.	
CountyAda			(Opera	101)		n.		
S/R % S/W % Sec. 2 , T, 4 N/, R, I /W				MUB	THE THE	UE.	•	
USE ADDITIONAL SHEETS IF NECESSARY FORWARD TO	HE MIL	ITE CO	PV TO	THE DEDARTMENT WILLIAM	122		-	

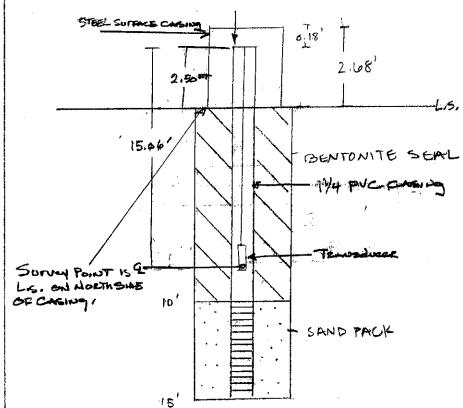


MONITORING WELL 9 (Strata 1A)

		<del>,</del>		~ 7 7	<del>,</del>					
	Boring No. 1a	눈숲	000		щ <sub></sub>	BLOWS Per 6 Inches	SPT (Corrected) Blows Per Foot	POCKET Penetro- meter(tsf)	WELL	REMARKS
	Subsurface Soil Description	DEPTH In Feet)	USCS	SYMBOL	SAMPLE Type	올후현	<del>2</del>	POCKE Penetro neter(ts	[ 교육 ]	Note: BGS = Below Ground
,	Top of Casing Elevation =	图印	] 화당	₹	<b>₹</b> ⊢	급스트	[은조존	et e	3 E	Surface
	Ground Surface Elevation	<u> </u>		0)	0,	6	82	μ <b>υ</b> Ε	Š	
/	Sandy SILT (Notive) - tan,	E	ML					İ	MY	Trace vegetation and
	very stiff, moist.								N	organics observed to 3
					ij.	•	ĺ	}	N	inches BGS.
	CLAY with SAND - brown,	Ē.	CL		1				N	Top of protective steel
	soft to stiff, moist to	E			1		1		N	casing above ground
	saturated.	2	İ		1		]		ИПЛ	= 2.8 feet.
		臣	1		1				ИИ	
		E 3	1		1				11 / T	Bentonite Seal · from 0 to 10 feet
		E			]				MY	moin o to to feet
i		Ē	}			ļ			1/1/21	1 1/4 inch Ø PVC Well
		E 4	]		]				/	, () : a.o., p , 70 non
		րակակակակակակականում 4 5 գ	}	//	1				M M	
		E		///	1				ИИ	
		<del>-</del> 5	<u> </u>						ИИ	
		E		///	1				ИIA	
		<b>E</b>			}				ИИ	
	Poorly-Graded GRAVEL with	E	√ GP	· ^					INYI	
ļ	Sand and Cobbles — light	րանավորվարհայիայիայիայի 10 11 12 13	*	. ' <del>  .</del>	1				N	
	brown, dense, saturated.	Ē7	♥*	): : · · · · · · ·				,	N	
		Ē	<del>=</del>	0					N	
		Ē.	•	0	1					
	*Reading on 9-7-2005 =	<u>-</u> 8	j .		1				M	
	7.1 feet	<u> </u>		0 /	Į				ИИ	
		<b>E</b> 9		$\sim$	1				ИM	
		Ē		) U					A A	
		Ē		0					ИN	
		E 10		0	]					
	+	Ē			1					
		E		0	]				- 目 -	Sand pack
		F 11		$\cdots \bigcirc$						from 10 to 15 feet
		<u>F</u>		, .U.						1
		E 12	j j	O						— 1 1/4 inch ø PVC
		≣ '~		10						screened well from
		Ē								10 to 15 feet
		E 13		0						
		Ē		$\cdots$	}			,	[::"目[:::]	
Ħ				bQ:					· 日· ::	
보		<u></u> 14	1	'O' '	•				[1]	Standaine nievemeter
ã.	•	14		0						Standpipe piezometer installed to 15 feet.
64347 PH HDT		L 13	ļ	· . L/					· H	middined to 10 foot
	Boring terminated at 15 feet	ամայիանականականականում								
9/19/2005	BGS.	E 45							1	1
19%		E 16								
۶		E	<u> </u>	1						
٤		E 17	1							
짂		Ē ''	1	]						
7		E	1	<u> </u>						
퉗		<u>F</u> 18	1	1		]				
Š		E	1			1				
6		Ē 10	1			ţ			ļ <u> </u>	
5		F 19		ĺ						
8		Ē	Į.	1						
器		F 20	1							
\$\$po\B05188a\deg\B05188a-b\ 1-2.deg	File: EAGSPO		Boring N	lumber	B-10		<u> </u>		<del></del>	EXPLORATORY
Sga							-			į į
ts/E	Project No.: B05188A		Date Dr	illed: 8-	30-2	005	_	=	3	BORING LOGS
Į,	Drill Rig: BK81		Boring [	Diamete	r:8 in	ch	5	TF	TSS	<b>'</b>
Ę,									ERMIG A MATERIALS TO THE FALL COPPOSES	G1 . 4 C1
6	Depth to Groundwater: 6.5'	<b>\$</b> 1	_ogged	oy: AM				7/		DIRECT OF T

# MOUTTOTING WELL NO.9 (STEATE 1A)





# Appendix B.6

MONITORING WELL 10 (Strata 1B)

Draft Boring No. 1 SAMPLE
Type
BLOWS
Per
R Inches
SM (Corrected,
Blows
Per Foot Feet) POCKET Penetro-meter(tsf) WELL CONSTRUCTION SYMBOL TÍSCS CLASS REMARKS Subsurface Soil Description Note: BGS = Below Ground Top of Casing Elevation = Surface Ground Surface Elevation = Sandy SILT (Native) - tan, Trace vegetation and very stiff, moist. organics observed to 3 inches BGS. CLAY with SAND - brown, CL Top of protective steel soft to stiff, moist to casing above ground = 3.1 feet. saturated. 2 Passing  $\frac{1}{200}$  screen = 78%. 3 0.75 3 BG 2 Liquid Limit (LL) = 30. 4 Plastic Index (PI) = 11. Moisture Content = 24.9%. 5 2 6 1.0 16 BG 1.25 10 Poorly-Graded GRAVEL with Sand and Cobbles - light brown, dense, saturated. 7 32 25 38 8 \*Reading on 9-7-2005 =38 BG 6.8 feet 9 -10 11 -12 - Bentonite Seal 1 inch Ø PVC Well 13 -14 Heaved sand from 15 to 15 16 feet. 4 15 27 26 BG 16 -17 18 -19 20 **EXPLORATORY** File: EAGSPO Boring Number: 8-1 Project No.: B05188A Date Drilled: 8-30-2005 **BORING LOGS** 

Boring Diameter: 8 Inch

Entropedy from the Chound up

Sheet 1 of 3

Logged By: AM

Drill Rig: BK-81

Depth to Groundwater: 6'

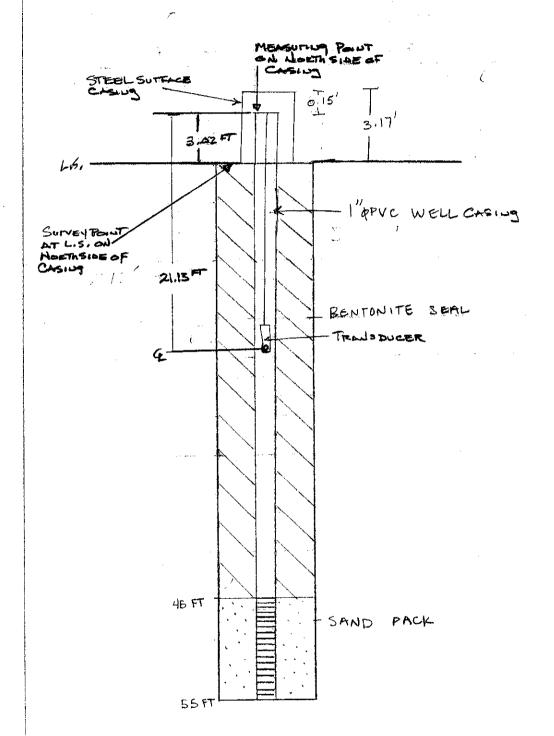
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	4	421	7 /							
	Boring No. 1 Subsurface Soil Description	DEPTH (In Feet)	USCS	SYMBOL	SAMPLE Type	BLOWS Per 6 Inches	SPT (Corrected) Blows Per Foot	POCKET Penetro- meter(tsf)	WELL CONSTRUCTION	REMARKS Note: BGS = Below Ground Surface
	Paorly—Graded GRAVEL with Sand and Cobbles — light brown, dense, saturated.	ավալիակակակականում 22 24		0 00 0		7 39 32	43			BG Heaved sand from 20 to 21 feet.
			CL	0						
		26 27 27				26 34 42	61			BG Minimal recovery, possible rock at bottom of spoon.
		28 29				11 15 26	31	>4.5 4.0 3.5		Passing#200 screen = 96%.  BG RG RG  Liquid Limit (LL) = 58.  Plastic Index (Pl) = 31.
		րդեսակակարկակարկարկարկարկարկարկարկարկարկարկա				10 13 20	33	3.0 3.5		BG
		32					j			Bentonite Seal Tinch Ø PVC Well
SEGIT PH MDT		34 35 35 36								
2.dwg 9/19/2005	except light brown at 36.5 feet.	36 37				7 12 17	29	1.5		BG
fildrojectslEogSpolBOSIBBoldrg\BOSIBBo-bi 1-2.drg 9/19/2005 526617 PM MDT	Clayey SAND — light brown, dense, saturated.	38 39 40	SC				, 1975 — Maria III.			
Sport	File: EAGSP0	<del></del>	Boring N	lumber:	<u>_</u> B−1	<u>.</u>	<u>_</u>		 	EXPLORATORY
c/Eag	Project No.: B05188A		Date Dri			005				BORING LOGS
ec ta	Drill Rig: BK—81		Boring D				5	TR	TA	-2
Š	Depth to Groundwater: 6'		ogged I					PRINCIPLE CHARGER		
•	, and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and the same and									

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Boring No. 1 Subsurface Soil Description	DEPTH (In Feet)	USCS	SYMBOL	SAMPLE Type	BLOWS Per 6 Inches	SPT (Corrected) Blows Per Foot	POCKET Penetro— meter(tsf)	WELL	REMARKS Note: BGS = Below Ground Surface
Clayey SAND — light brown, dense, saturated.	41 42 43 44	SC			27 30 41	47			Trace orange staining observed in sample.  BG  RG  RG  Bentonite Seal from 0 to 45 feet  1 inch Ø PVC Well
Poorly—Graded medium SAND — light brown, very dense, saturated.	45 46	SP			29 56 60	69			RG
	45 46 47 48 49 50 51 52 53								Sand pack from 45 to 55 feet  1 inch Ø PVC screened well from 45 to 55 feet
	50 51 51				33 59 62	71			RG BG
	52 53 54 55						2 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -		Standpipe piezometer installed to 55 feet.
BGS.									
	156 57 58 59 60								EYDI ODATODV
File: EAGSPO			lumber:		<del>-</del> -	4		ā	EXPLORATORY
Project No.: B05188A			illed: 8-	····		. ــــــــــــــــــــــــــــــــــــ		<u> </u>	BORING LOGS
Drill Rig: BK—81	<del></del> -		Diameter	r:8 in	ch		LMNISAL ENGINEERR		Q1
Depth to Groundwater: 6'	L	ogged.	Ву: АМ			Ind	regular From	the Grown	Sheet 3 of 3

# MONITOTING WELL NO. 10 (STRATIA LIB)



France

# Appendix B.7

MONITORING WELL 11 (UWI 1A)

# RECEIVED

Depth flow encountered

control devices:

caps

IDAHO DE, ARTMENT OF WA	ATER RESOURCES	_
OCT 2 8/1997 WELL DRILLER'S	Olice Use Only	
Use Typopuritor Bally	Inspected by	_
-bernieur of Hatel Heschilder Tale 1100001)	0 / 30 /	—
1. DRILLING PERMIT NO. 63 - 97 - W- 0633 - 80 /	11. WELL TESTS: Lat: : Long: : :	1
0.110.110.110.	☐ Pump ☐ Bailer ☐ Air AXFlowing Artesian	
2. OWNER: Hope Rutheran Church	Yield gal /min. Drawdown D	ne
- United water Corp		
Address PO Box 7488  City Boise State TD Zip 83707		
StateState		
3. LOCATION OF WELL by legal description:	Water Temp. Bottom hole temp.	
Sketch map location must agree with written location.	Water Quality test or comments:	
N	12. LITHOLOGIC LOG: (Describe repairs or abandonment)	
	Bore	Water
Twp. 4 North & or South	Die   From   To   Possession Liberton   1964 - 1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971   1971	Y   N
Rge. / East   or West   Sec. // N/E 1/4 S/E 1/4 1/4  Gov't Lot County 40 acros 160 acros 160 acros	10 1 6 topsoil	X
GOV'1 of County 1/4 3/C 1/4 1/4 1/4	6 31 sand & gravel	X
Lat. I Ond		
	43   68   cemented sand   X	<del></del>
Address of Well Site State St & Linder  Hope Lutk Chunch City Engle  (Give at loast name of road + Distance to Road or Landmork)	71 93 sand X	X
	93 103 0127	- X
t. 7 Blk. 1 Sub. Name Shish Acres	103 125 sand X	
	125 140 clay	X
4. USE:	140 200 sand & clay streaks X	
☐ Domestic ☐ Municipal <del>※XMonitor</del> ☐ Irrigation ☐ Thermal ☐ Injection	200 205 sand X	
TYPE OF HORIS	205 212 clay 212 485 sand y	X
5. TYPE OF WORK check all that apply  XX New Well  Modify  Abandonment  Other	<del></del>	
AX New Well Li Modify Li Abandonment Li Other	E12 F40	
☐ Air Rotary ☐ Cable ☐ Mud Rotary ☐ Other	540 845 blue clay	X
		1-
SEALING PROCEDURES SEALIFICIER PACK AMOUNT METHOD		+
Material From To Sacks or		1-
Pounds	see drawing for pipe informatio	
		-
as drive shoe used? L: Y D N Shoe Depth(s)		
as drive shoe seal tested? □Y □N How?		+-
CASING/LINER:	RECEIVED	<del>  </del>
nameter From To Gauge Material Casing Liner Welded Threaded		+
	OCT 2 3 1997	
ngth of HeadpipeLength of Tailpipe	WATER RESOURCES WESTERN REGION	
PERFORATIONS/SCREENS	M CADOFILMAN	<del>                                     </del>
Perforations Method	JANO	}
Screens Screen Type	Completed Born	1
	Date: Chaded to 18 m to -	ile)
From To Slot Size Number Diameter Material Casing Liner		
	13. DRILLER'S CERTIFICATION	
	I/We certify that all minimum well construction standards were complied withe time the rig was reployed.	ith at
	and unite the rig was reproved.	
STATIC WATER LEVEL OR ATTENDED	Firm Name Stevens & Sons Firm No.	153
. STATIC WATER LEVEL OR ARTESIAN PRESSURE: ft. below ground Artesian pressure 6 lb.	100	
tt. below ground Artesian pressure 6 lb. Fight flow encountered 212 tt. Describe access port or	Firm Official Date	

Supervisor or Operator\_

Ron Stevens

(Sign once if Firm Official & Operator)

10/20/97

\_ Date\_

\_ft. Describe access port or

Unin 2 Water State & Line & 63-97-W-0633-801 test Well #1 67931 ABK8",250 wall Notto scale 8" DrivosLoe All Plastic is 2" sch 80 290 300 Natural sand pack 230 +5545 310 310' 350 340' 350 360 320 380 Both Wells flow under 145 of Lead - 460′ - 470 RECEIVED OCT 2 3 1997

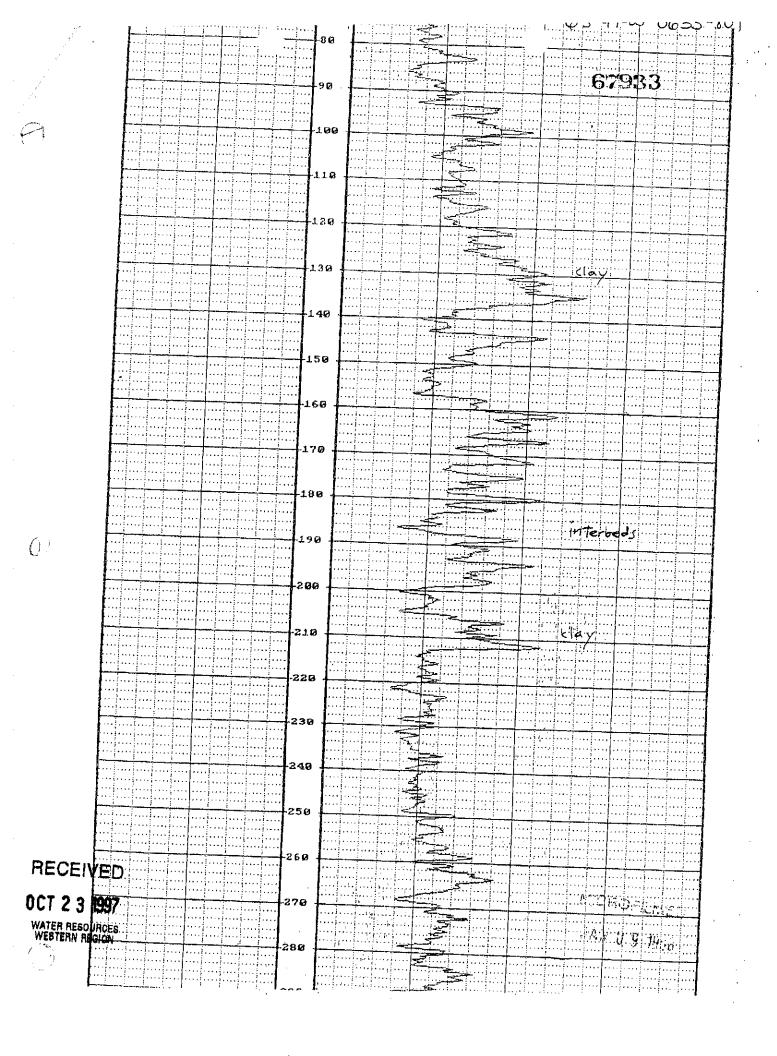
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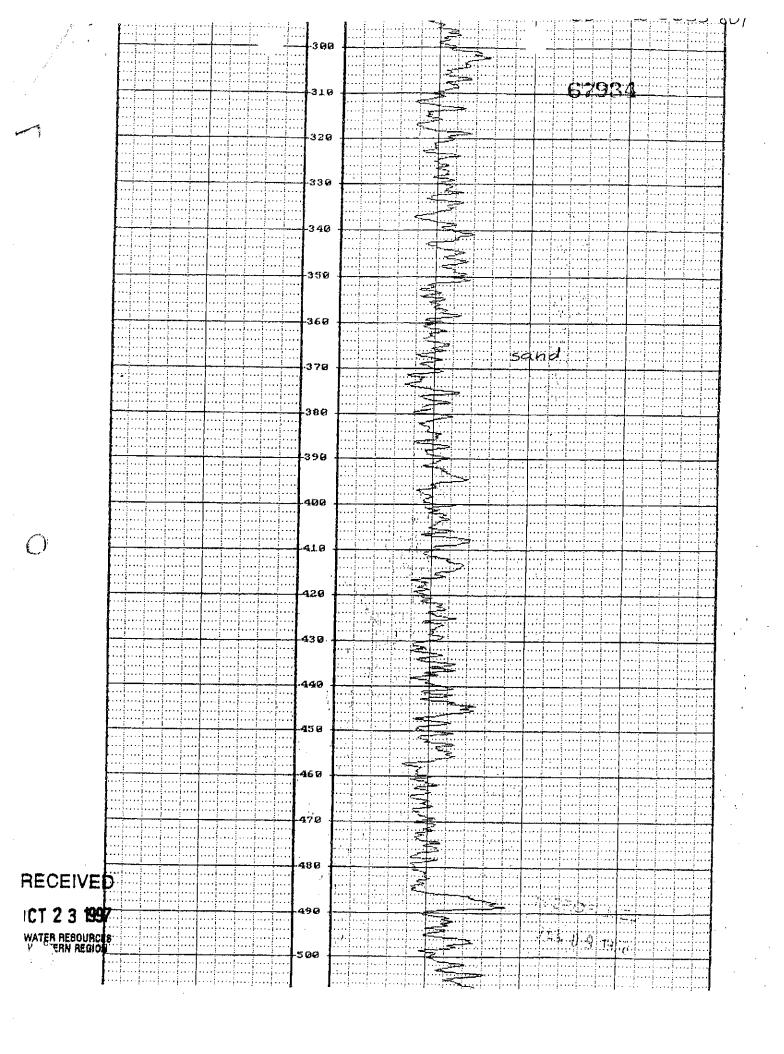
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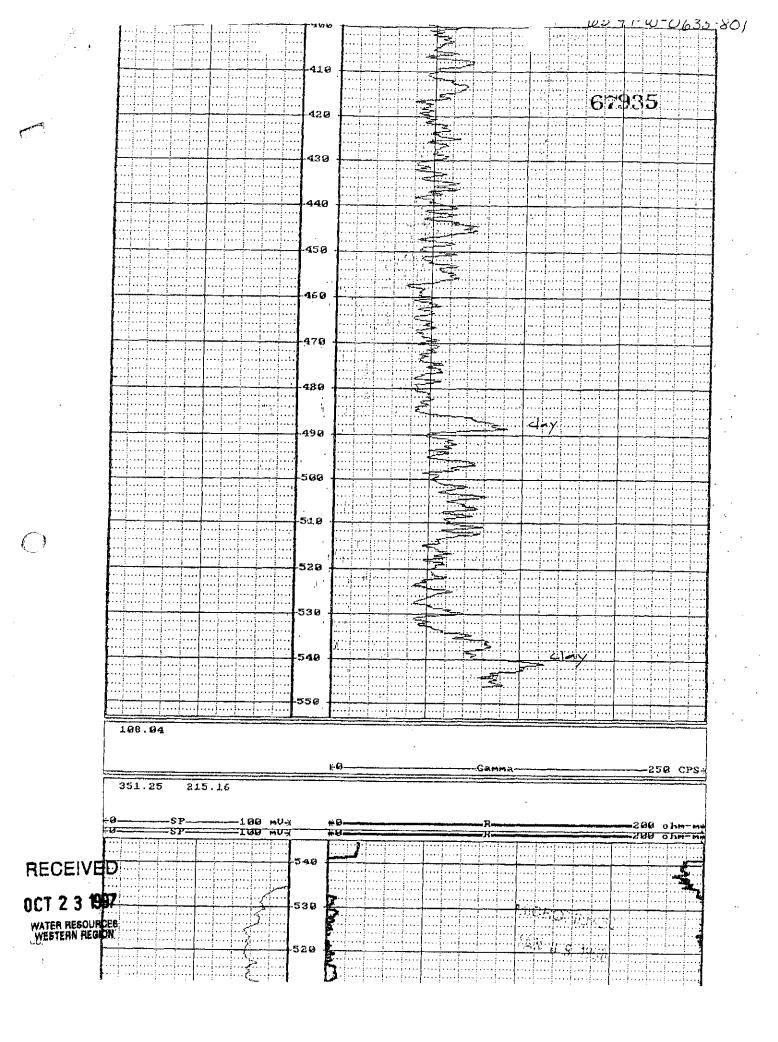
WATER RESOURCES WESTERN REGION

State & Linder Test Well

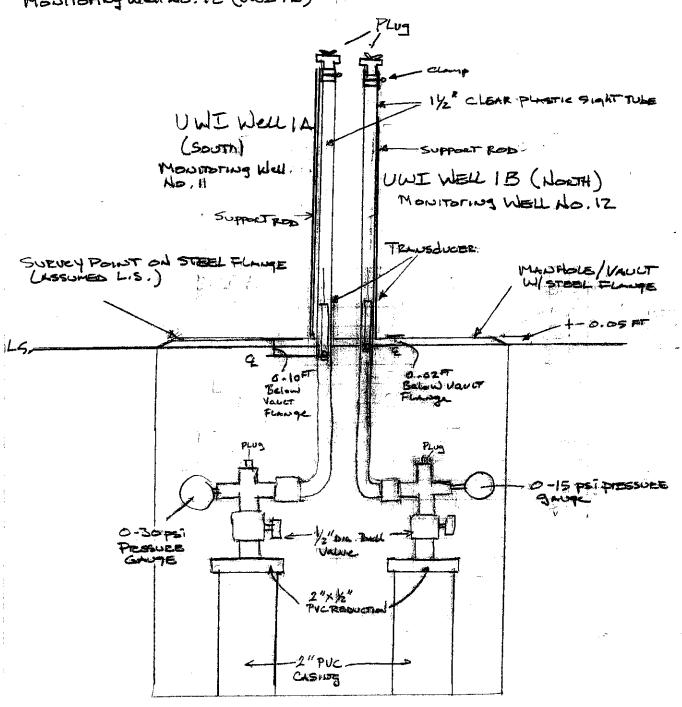
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City of EAGLE 1-DAY APPUIFER TEST
MONITORING WELL AG. II (UNI /A) AND
MONITORING WELL AG. IZ (UNI IB)



# Appendix B.8

MONITORING WELL 12 (UWI 1B)

#### IDAHO DEPARTMENT OF WATER RESOURCES

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	Off Inspected	ice Use C	niy
•	Twp	Rge	
	1/4 Lat: : :	1/4 Long:	1/4 : :

Department of Water Resources Tag #000019  Use Typewriter or Ballp	oint Pen		67930	) Twp	Rge  1/4	Sec		İ
1. DRILLING PERMIT NO. 63 - 97 - W- 0 633 - 80 /	11. WE	1 TES	STS.	]	Long:			
Other IDWR No.		Pump	ן Bailer	Air	XXFlowing		_	_
2. OWNER: Hope Rutheran Church	Y)eld g		Drawdown		umping Level		Time	
Name United Water Corp						T		
Address PO Box 7488								
City Boise State TD Zip 83707								
	Water Ter	np.			Bottom	hole tem:	D.	
3. LOCATION OF WELL by legal description:			or comments:					
Sketch map location must agree with written location.				Depth :	first Water En	countere	d	
N	12. LITH	OLOG	iIC LOG: (De	escribe repa	airs or aband	onment)	Wa	ater
<del> </del>	Bore		D	alami Muta-	Osmilia a Tues		Υ	T
Twp.	Dia. From		Remarks: Lithe	·	Monthly of 1611	belainte	<del> -</del> '	X
W Fige East [] or West [5]	10 1	ــــــــــــــــــــــــــــــــــــــ	topsoil sand &					X
Sec. // // 1/4	8 31		sand &		120	<del></del>	X	<u> </u>
Gov't Lot County	43		cemente		лау		X	+-
Lat: : Long: : :	68		clay	d Band			41	X
Address of Well Site State St & Linder	71		sand				x	<del></del>
Address of Well Site State St & Linder  (Hope Luft Church) City Factor  (Give at loast name of road + Distance to Posed of Landmerk)	93		clay				<u> </u>	x
LL. 7 Blk. / Sub. Name Strick Acres		125	sand				X	+
LI. 1 DIK. 1 SUD. NATITED COLORS	125	140	clay					Х
4. USE:	140	200	sand &	clay st	reaks		Х	
© Domestic © Municipal ***	200		sand				X	
☐ Thermal ☐ Injection   XOther <u>Test well</u>	205		clay					X
5. TYPE OF WORK check all that apply (Replacement etc.)		485	sand				X	
XX New Well  Modify  Abandonment  Other		513		cemente	d sand s	treak	<del> </del>	<u> </u>
6. DRILL METHOD	- L I	540	sand				<u>X</u>	4-
☐ Air Rotary ☐ Cable ☐ XXIII Rotary ☐ Other	540	845	blue cl	ay	<del></del>		<b> </b>	X
) and the property of		<del>- </del> -					ļ	<del> </del>
SEALING PROCEDURES  SEAL/FILTER PACK AMOUNT METHOD	\ <del>-\-</del>	<del></del> -		<del></del>				<del>}</del>
Addressed Emm To Sacks of	<del>      -   -                            </del>	<del>-}</del>						$\vdash$
Pounds	<del>  </del>	+	-see draw	ing for	pipe in	forma	cior	-
		+		<del></del>				
		1	<del></del>	******				<b> </b>
Was drive shoe used? □ Y □ N Shoe Depth(s)		<u> </u>						
Was drive shoe seal tested?   Was drive shoe seal tested?   How?								
8. CASING/LINER:				ECEIV	ED			
Diameter From To Gauge Material Casing Liner Welded Threaded		<b>_</b>						
			n	CT 23	1997			Ļ
			7	VATER RESO	URCES			<del> </del>
	<del>   </del>	1 00		WESTERN RE	GION-			
Length of Headpipe Length of Taîlpipe	<del> </del>	1.77	CI3OFILM	l'in		——{		
9. PERFORATIONS/SCREENS	<del>  -   -  </del>	1 1	4.2	<u> </u>				-
☐ Perforations Method	<del></del>	3 / d.2	4 (1 9 19g)	60				
[] Screens Screen Type	Complete	,			molated 1	(Meas 0/13/9		ie)
From To Slot Size Number Diameter Material Casing Lines	Date: Sta	trea _ A	/25/97			,	11	
	13. DRIE	LER'S	CERTAFICA	TION	•	™.		
	I/We certify	that all	minimum well o		standards we	re compli	ed wi	th at
	the time the	e rig was	reproved,	///				
	Firm Name	St	evens & So	onst		Firm No.		15
10. STATIC WATER LEVEL OR ARTESIAN PRESSURE:	rim Name		19	1/1/2	\	L1⊔11 140'		
ft. below ground Artesian pressure 6 lb.	Firm Officia	1	M L	1/1/	Date			
Depth flow encountered 212 ft. Describe access port or	and		(. /		Walley Wally			
control devices: caps	Supervisor	or Opera	ator Ron S	Stevens	Date_	10	)/20	)/9

(Sign once if Firm Official & Operator)

United Water State & Line R 63-97-W-0633-801 test Well #1 67931 ABK8",250 wall Not to scale 8" Drivostoe All Plastic is 2" sch 80 290 300 Natural sand pack 230 +545 310 3201 1) 350 340' 350 360' 320 Both Wells flow under 145 of Lead RECEIVED 48 0.8 195P OCT 2 3 1997

67932

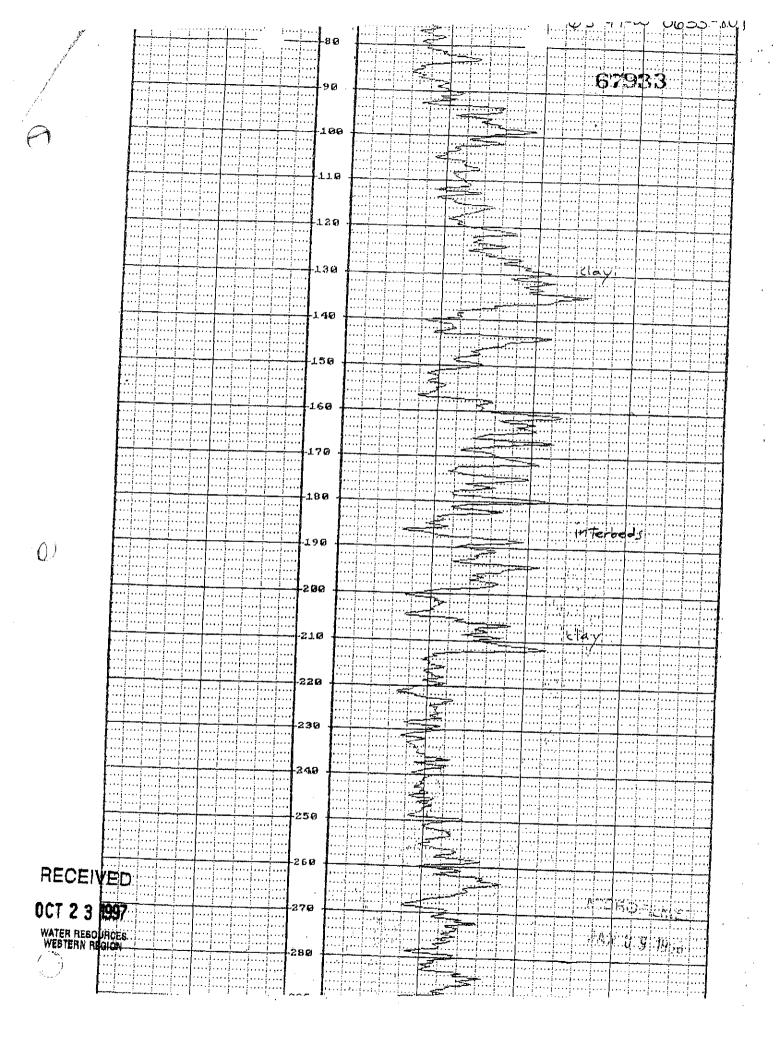
RECEIVED

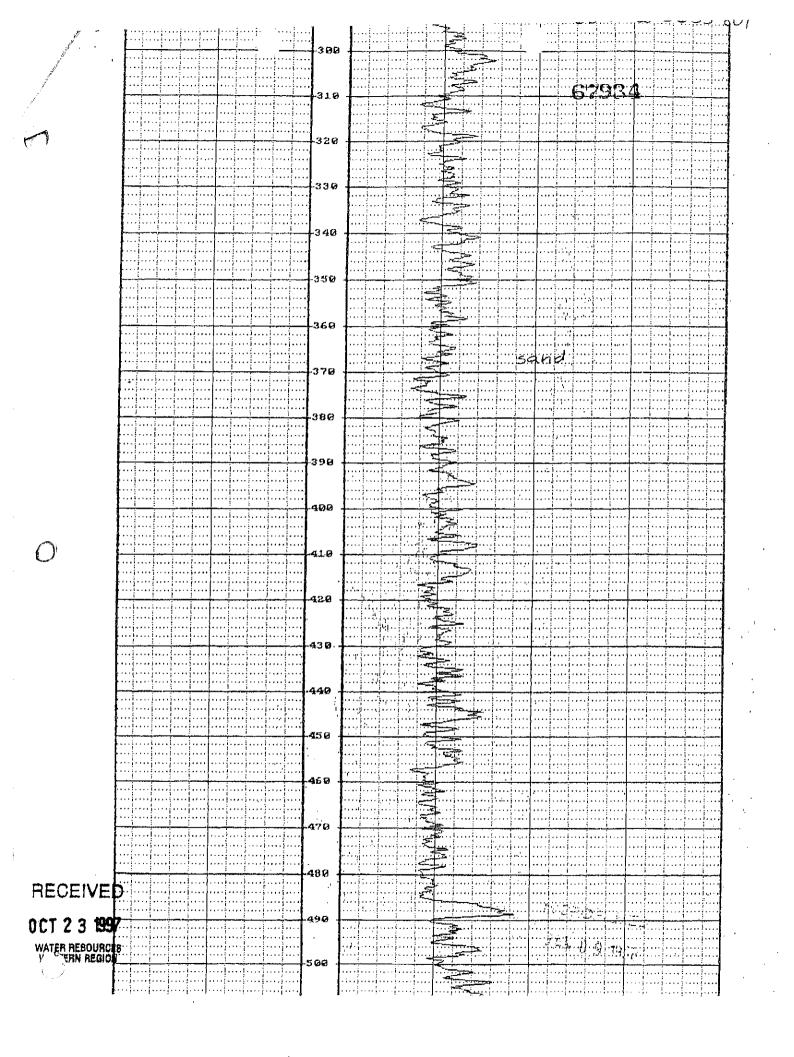
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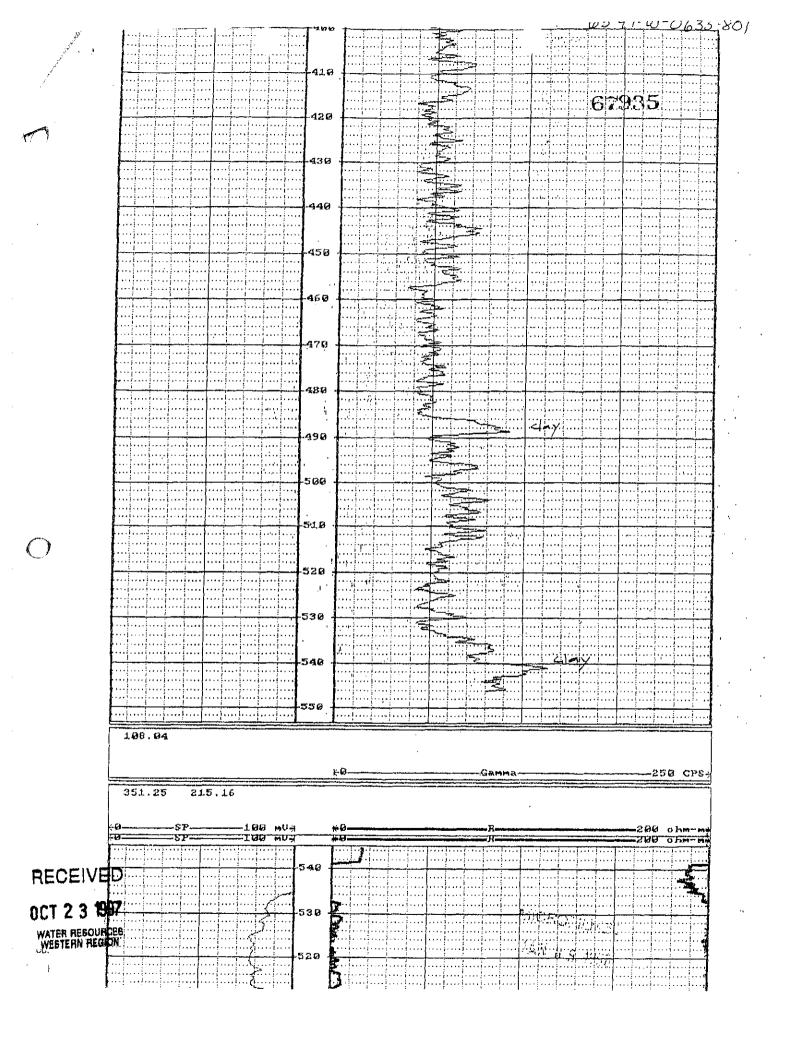
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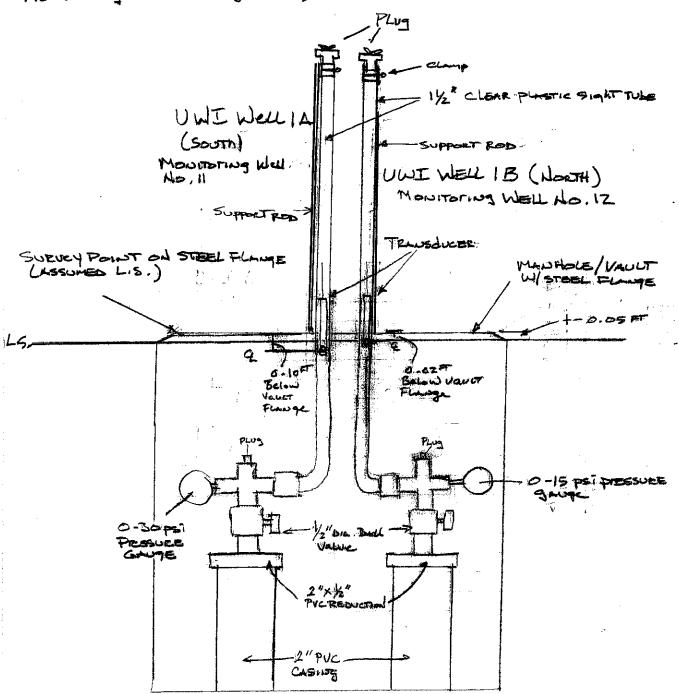
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MONITORNO WELL NO. 12 (UNIIA) AND MONITORNO WELL NO. 12 (UNIIA)



### **APPENDIX C**

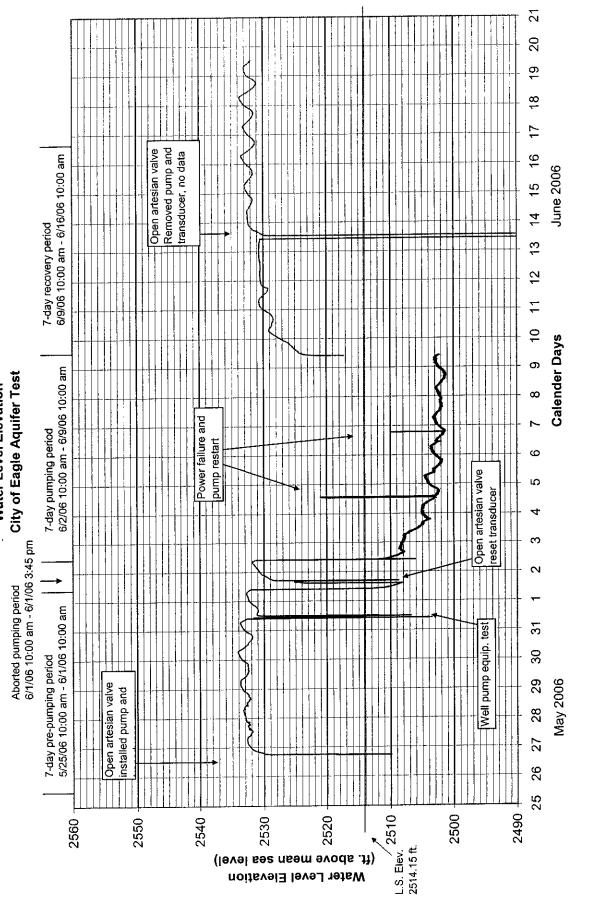
## MONITORING WELL DATA GRAPHS

- 1.Test Well 2 (Eaglefield)(Pumping Well)
- 2.Test Well 1 (Legacy)
- 3. Monitoring Well 4 (QCR 4)
- 4. Monitoring Well 6 (Rick's)
- 5. Monitoring Well 9 (Strata 1A)
- 6. Monitoring Well 10 (Strata 1B)
- 7. Monitoring Well 11 (UWI 1A)
- 8. Monitoring Well 12 (UWI 1B)
- 9.Barometer

# Appendix C.1

TEST WELL 2 (Eaglefield)(Pumping Well)

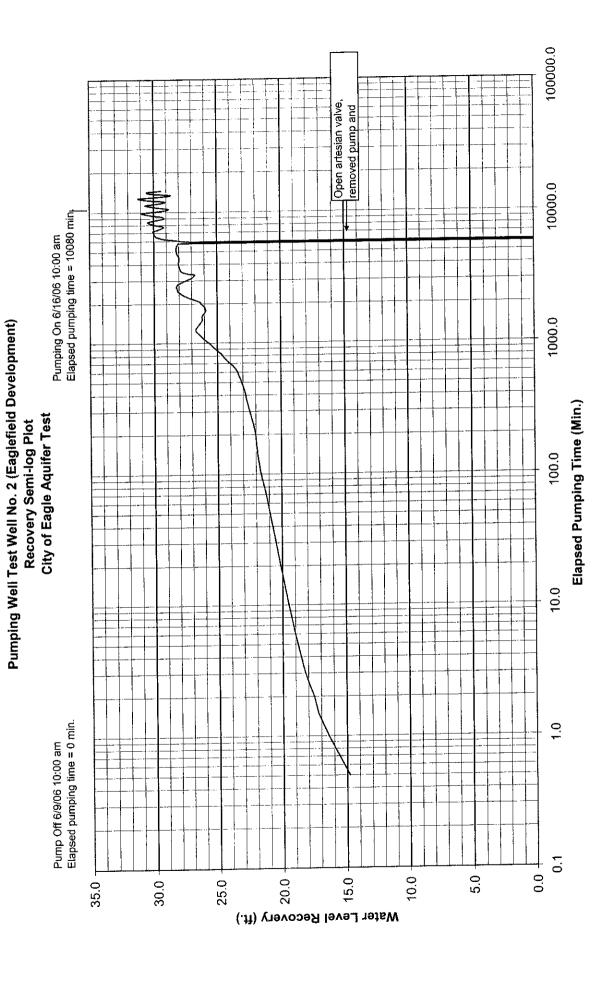
Pumping Well Test Well No. 2 (Eaglefield Development)
Water Level Elevation

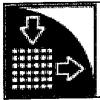


100000.0 immeadiate pump restart Pump Off 6/9/06 10:00 am Elapsed pumping time = 10080 min. Power failure and 10000.0 Discharge valve adjustment 1000.0 **Drawdown Semi-log Plot** City of Eagle Aquifer Test 100.0 10.0 Discharge valve adjustment Pumping On 6/2/06 10:00 am Elapsed pumping time = 0.0 min. 1.0 0.1 0.0 10.0 5.0 15.0 20.0 30.0 25.0 Water Level Drawdown (ft.)

Elapsed Pumping Time (Min.)

Pumping Well Test Well No. 2 (Eaglefield Development)

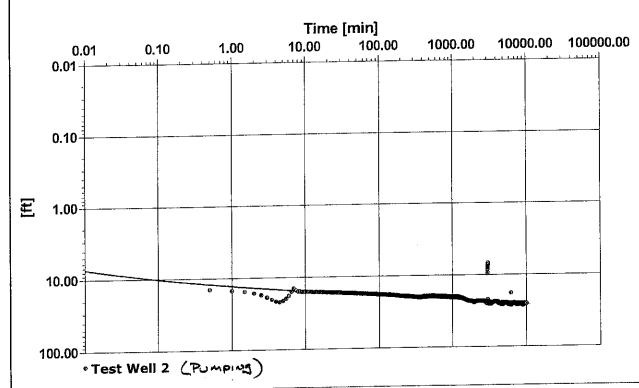




#### City, State/Province Address Contact Info Company Name

Pumping Test Analysis Report							
Project: Eagle Aquifer Test							
Number:							
Client:							

to a fire the district		
Location:	Pumping Test: Pumping Test 1	Pumping well: Test Well 2
Test conducted by:		Test date: 6/29/2006
Analysis performed by:	New analysis 1	Date: 6/29/2006
Aguifer Thickness: 100.00 ft	Discharge rate: 1580 [U.S. gal/min]	



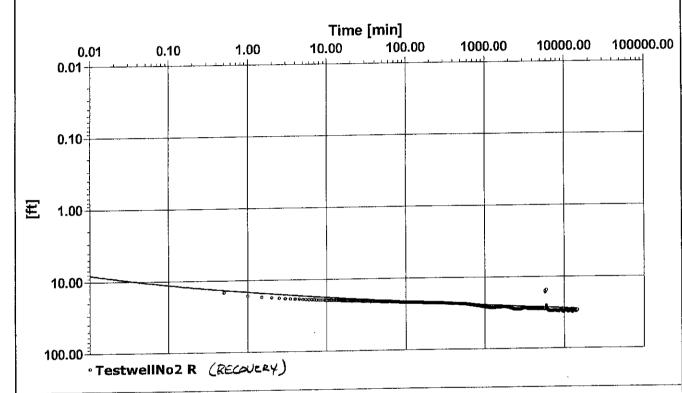
Transmissivity	К	Storage coefficient	Radial distance to PW
[ft²/d]	[ft/d]		[ft]
2.00 × 10 <sup>4</sup>	2.00 × 10 <sup>2</sup>	2.93 × 10 <sup>-3</sup>	0.5
	Transmissivity [ft²/d] 2.00 × 10 <sup>4</sup>	[ft²/d] [ft/d]	[ft²/d] [ft/d]



#### City, State/Province Address Contact Info Company Name

Pumping Test Analysis Report							
Project:	Recovery Eagle Aquifer Test						
Number:		No. 1 (1)					
Client:							

Part to contract of the			
Location:	Pumping Test: Recovery Eagle Aquifer Test	Pumping well: TestwellNo2 R	
Test conducted by:		Test date: 6/30/2006	
Analysis performed by:	recovery	Date: 6/30/2006	
Aguifer Thickness: 100.00 ft	Discharge rate: 1580 [U.S. gal/min]	Discharge rate: 1580 [U.S. gal/min]	



Calculation after Theis	T	l v	Storage coefficient	Radial distance to PW
Observation well	Transmissivity	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	Ctorage seement	
	[ft²/d]	[ft/d]		[ft]
TestwellNo2 R	1.75 × 10⁴	1.75 × 10 <sup>2</sup>	3.00 × 10 <sup>-3</sup>	0.5

# Appendix C.2

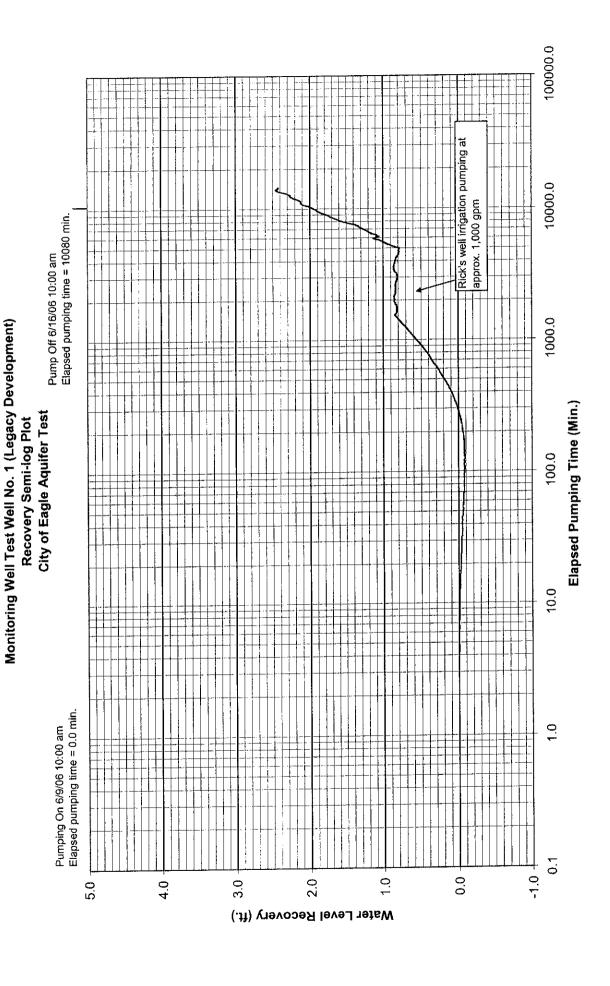
TEST WELL 1 (Legacy)

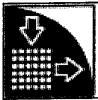
21 20 6 8 17 Rick's well irrigation pumping at 16 7-day recovery period 6/9/06 10:00 am June 2006 13 14 15 approx. 1,000 gpm 12 <del>--</del> 10 o, 7-day pumping period 6/2/06 10:00 am - 6/9/06 10:00 am City of Eagle Aquifer Test œ Calender Days Ŋ 4 Aborted pumping period 6/1/06 10:00 am - 6/1/06 3:45 pm Replacement of sight tube, discharge at approx. 30 pgm 7-day pre-pumping period 5/25/06 10:00 am - 6/1/06 10:00 am 31 30 29 28 May 2006 26 27 25 24 2513-2520 -2519 -2512 2515 2514 2518 2516 2522 2517 2528 2526 2525 2524 2523 2521 2529 2533 2532 2531 2530 2527 2535 2534 L.S. Elev. 2512.97 ft. (ft. above mean sea level) Water Level Elevation

Monitoring Well Test Well No. 1 (Legacy Development)

Water Level Elevation

100000.0 Pump Off 6/9/06 10:00 am Elapsed pumping time = 10080 min. 10000.0 1000.0 Monitoring Well Test Well No. 1 (Legacy Development)
Drawdown Semi-log Plot
City of Eagle Aquifer Test Elapsed Pumping Time (Min.) 100.0 10.0 Pumping On 6/2/06 10:00 am Elapsed pumping time = 0.0 min. 1.0 0.1 -1.0 0.0 1.0 4.0 3.0 2.0 Water Level Drawdown (ft.)

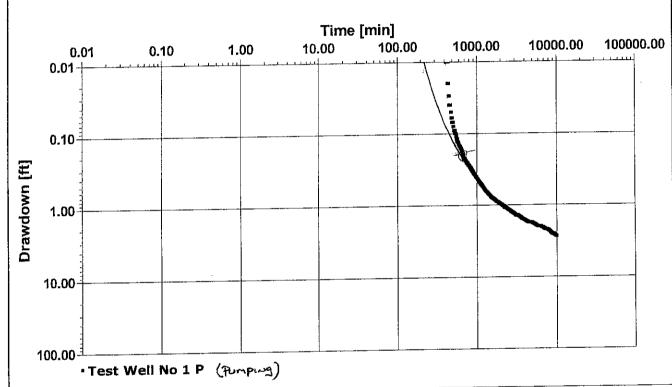




#### City, State/Province Address Contact Info Company Name

Pumping Test Analysis Report	Pumping Test Analysis Report				
Project: Eagle Aquifer Test					
Number:					
Client:					

Location:	Pumping Test: Drawdown	Pumping well: Test Well No 2 P
Test conducted by:		Test date: 6/30/2006
	New analysis 1	Date: 6/30/2006
Analysis performed by:		
Agulfer Thickness: 100.00 ft	Discharge rate: 1580 [U.S. gal/min]	The state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the s



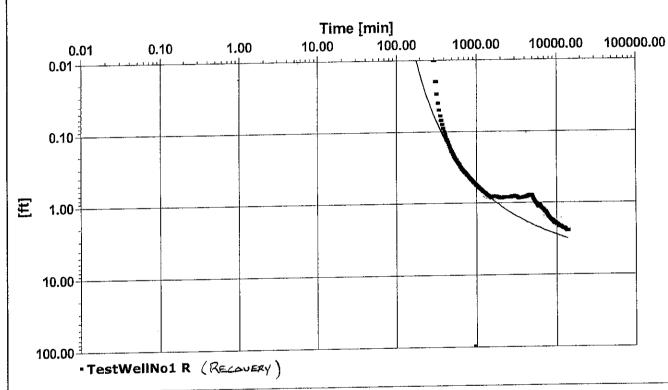
Calculation after Theis	Calculation after Theis				
Observation well	Transmissivity	Storage coefficient	Radial distance to PW		
	[ft²/d]	[ft/d]		[ft]	·- <del></del> -
Test Well No 1 P	1.95 × 10 <sup>4</sup>	1.95 × 10 <sup>2</sup>	1.58 × 10 <sup>-2</sup>	1604.58	
Test yven No TP					



#### City, State/Province Address Contact Info Company Name

 Pumping Test Analysis Report
Project: Recovery Eagle Aquifer Test
Number:
Client:

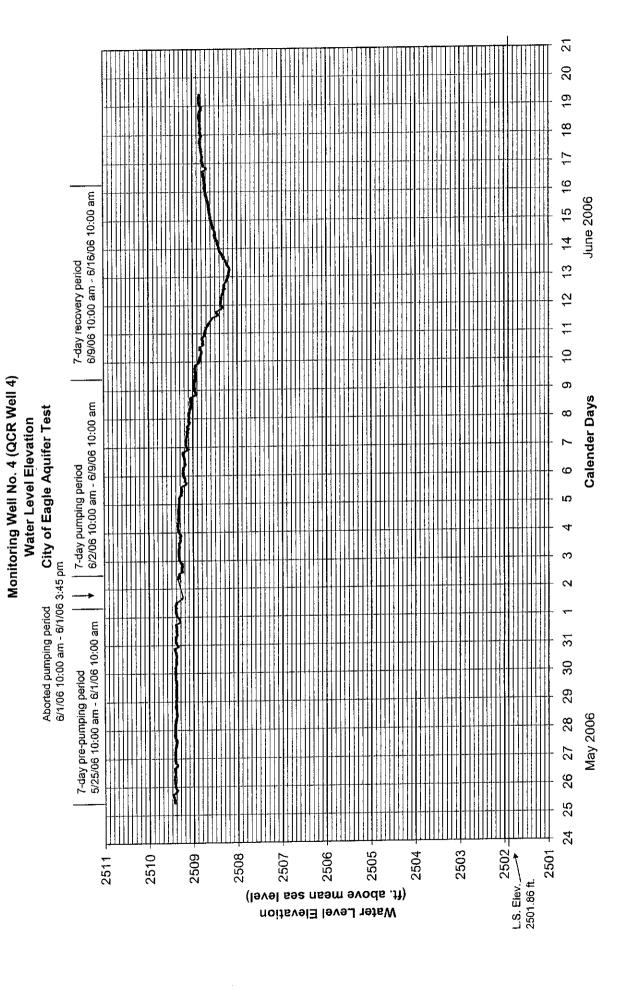
Print the state of		<u> </u>
Location:	Pumping Test: Recovery Eagle Aquifer Test	Pumping well: TestwellNo2 R
Test conducted by:		Test date: 6/30/2006
Analysis performed by:	recovery	Date: 6/30/2006
Aguifer Thickness: 100.00 ft	Discharge rate: 1580 [U.S. gal/min]	



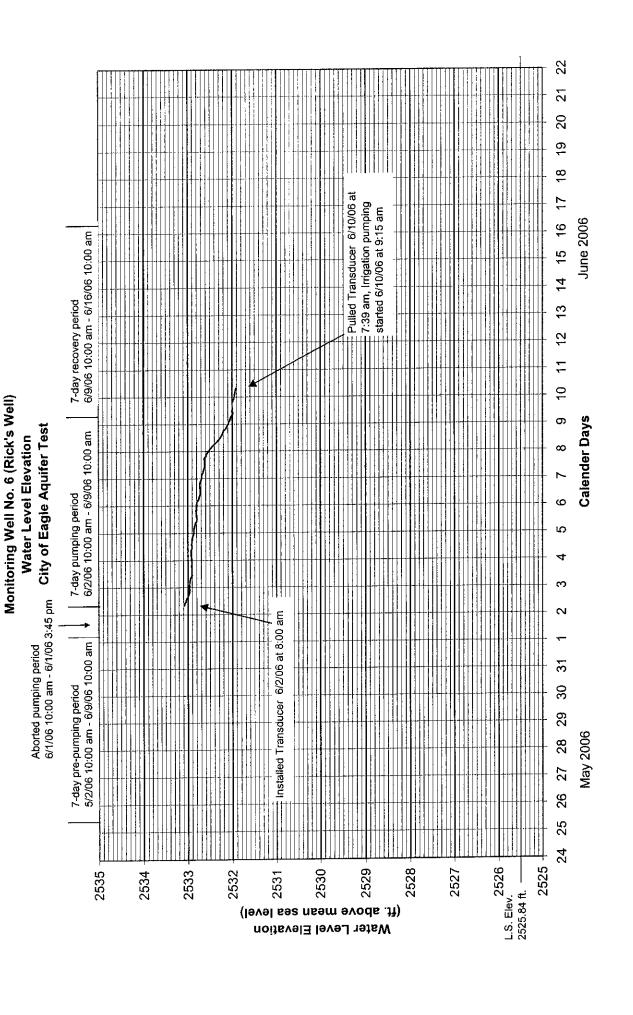
Calculation after Theis	ulation after Theis				
Observation well	Transmissivity	К	Storage coefficient	Radial distance to PW	
	[ft²/d]	[ft/d]		[ft]	
TestWellNo1 R	2.01 × 10 <sup>4</sup>	2.01 × 10 <sup>2</sup>	1.30 × 10 <sup>-2</sup>	1604.58	
IOSTANDINO LIV					

# Appendix C.3

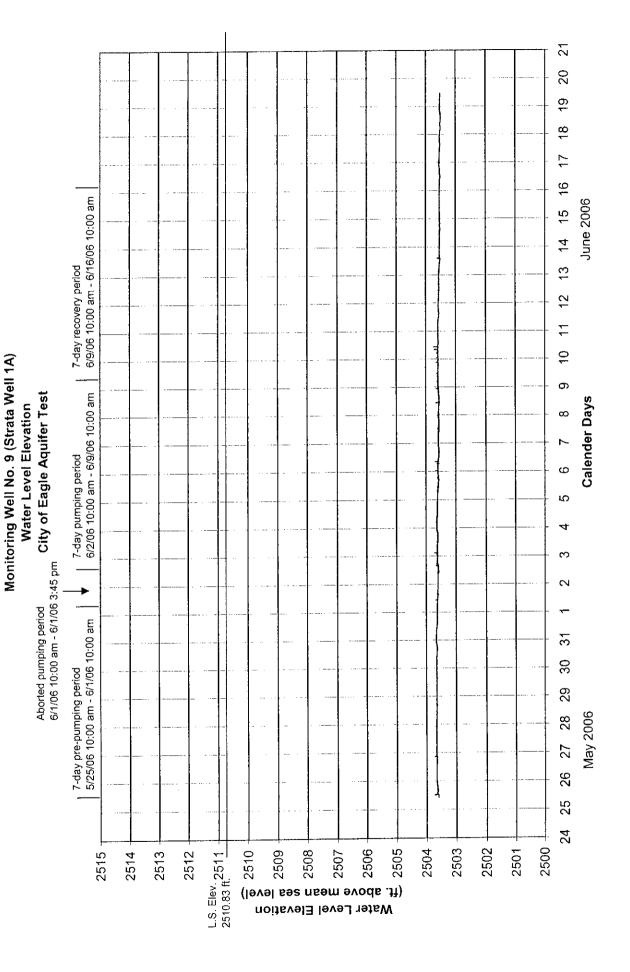
MONITORING WELL 4 (QCR 4)



MONITORING WELL 6 (Rick's)



MONITORING WELL 9 (Strata 1A)



MONITORING WELL 10 (Strata Well 1B)

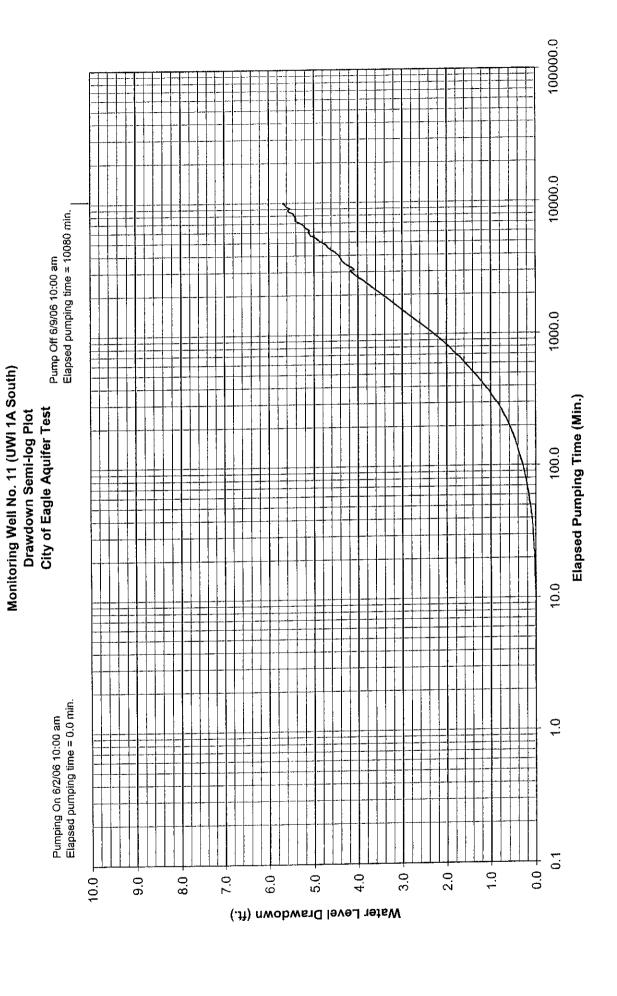
7-day recovery period 6/9/06 10:00 am June 2006 <u>ლ</u> Ξ თ Calender Days City of Eagle Aquifer Test 7-day pumping period 6/2/06 10:00 am - 6/9/06 10:00 am Ŋ က Aborted pumping period 6/1/06 10:00 am - 6/1/06 3:45 pm  $\alpha$ 7-day pre-pumping period 5/25/06 10:00 am - 6/1/06 10:00 am May 2006 L.S. Elev. 2510.52 ft,2511 (ft. above mean sea level) Water Level Elevation

Monitoring Well No. 10 (Strata Well 1B) Water Level Elevation MONITORING WELL 11 (UWI 1A)

14 15 16 7-day recovery period 6/9/06 10:00 am - 6/16/06 10:00 am June 2006 <del>-</del> O 7-day pumping period 6/2/06 10:00 am - 6/9/06 10:00 am Calender Days City of Eagle Aquifer Test ល Aborted pumping period 6/1/06 10:00 am - 6/1/06 3:45 pm 7-day pre-pumping period 5/25/06 10:00 am - 6/1/06 10:00 am May 2006 (ft. above mean sea level) L.S. Elev. 2518.83 ft. Water Level Elevation

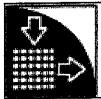
Monitoring Well No. 11 (UWI 1A South)

Water Level Elevation



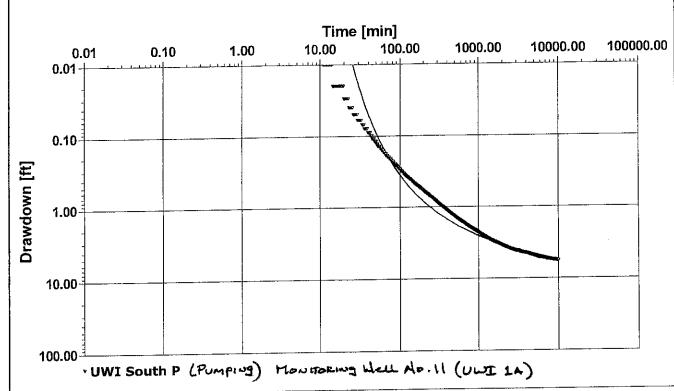
1000001 Open artesian valve at pumping well, discharge of approx. 1,000 gpm 10000.0 Pump Off 6/9/06 10:00 am Elapsed pumping time = 10080 min 1000.0 Elapsed Pumping Time (Min.) Recovery Semi-log Plot City of Eagle Aquifer Test 100.0 10.0 Pumping On 6/2/06 10:00 am Elapsed pumping time = 0.0 min. 1.0 0.1 0.0 3.0 2.0 1.0 4.0 5.0 10.0 8.0 7.0 6.0 9.0 Water Level Recovery (ft.)

Monitoring Well No. 11 (UWI 1A South)



	Pumping Test Analysis Report
	Project: Eagle Aquifer Test
	Number:
ľ	Client:

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Location: Pumping Test: Drawdown		Pumping well: Test Well No 2 P
Test conducted by:		Test date: 6/30/2006
Analysis performed by:	New analysis 1	Date: 6/30/2006
Aguifer Thickness: 100.00 ft	Discharge rate: 1580 [U.S. gal/min]	

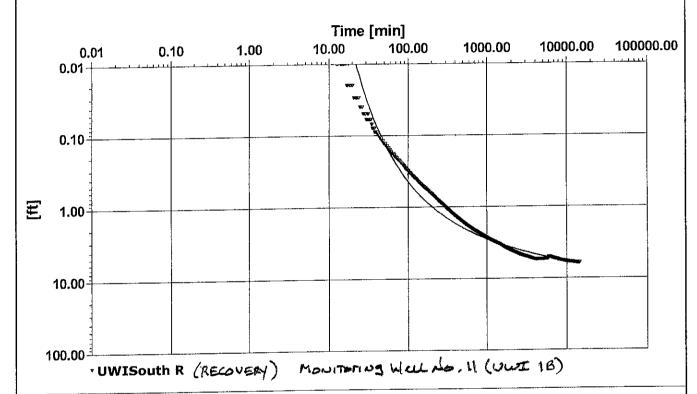


Calculation after Theis					
Observation well	Transmissivity	К	Storage coefficient	Radial distance to PW	
Observation won	[ft²/d]	[ft/d]		[ft]	
UWI South P	1.85 × 10 <sup>4</sup>	1.85 × 10 <sup>2</sup>	7.80 × 10 <sup>-4</sup>	2405.68	
OVVI SOUTH					



Pumping Test Analysis Report	
Project: Recovery Eagle Aquifer Test	
Number:	
Client	

Location:	Pumping Test: Recovery Eagle Aquifer Test	Pumping well: TestwellNo2 R
Test conducted by:		Test date: 6/30/2006
Analysis performed by:	recovery	Date: 6/30/2006
Aguifer Thickness: 100,00 ft	Discharge rate: 1580 [U.S. gal/min]	

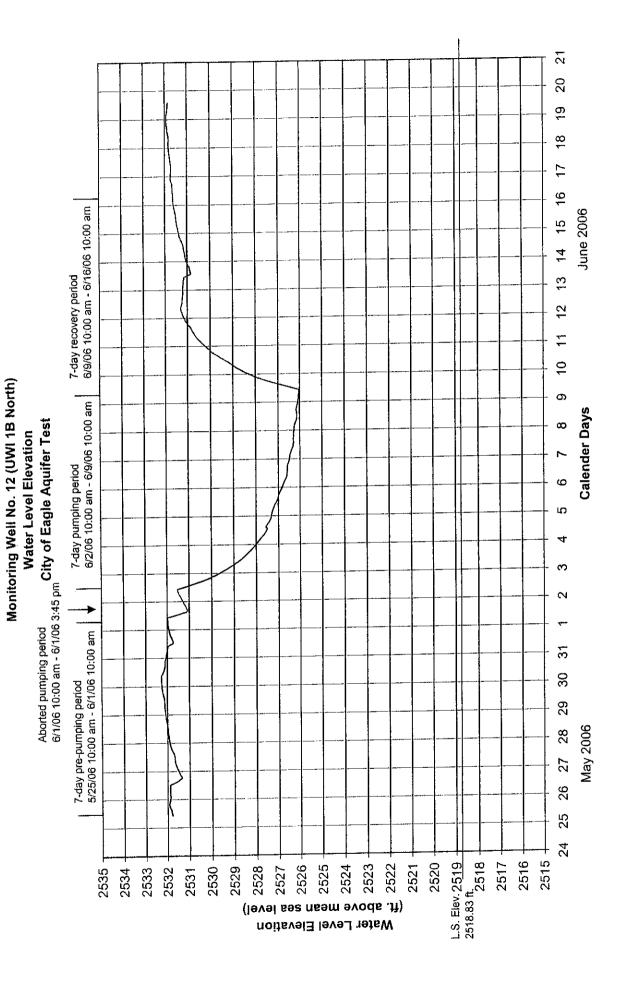


Calculation after Theis					
Observation well	Transmissivity	К	Storage coefficient	Radial distance to PW	
	[ft²/d]	[ft/d]		[ft]	
UWISouth R	1.77 × 10 <sup>4</sup>	1.77 × 10 <sup>2</sup>	6.62 × 10 <sup>-4</sup>	2405.68	

Exclusion of Points t= 2000 to t= 4257

COMPUTER FIT

MONITORING WELL 12 (UWI 1B)



100000.0 Pump Off 6/9/06 10:00 am Elapsed pumping time = 10080 min. 10000.0 1000.0 Elapsed Pumping Time (Min.) City of Eagle Aquifer Test 100.0 10.0 Pumping On 6/2/06 10:00 am Elapsed pumping time = 0.0 min. 0.1 0.1 0.0 2.0 1.0 3.0 4.0 5.0 10.0 0.6 8.0 7.0 6.0 Drawdown from Static Water Level (ft.)

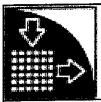
Monitoring Well No. 12 (UWI 1B North)

**Drawdown Semi-log Plot** 

100000.0 10000.0 End of balanced recovery period  $6/16/06 \ 10:00 \ am$  Elapsed pumping time =  $10080 \ min$ . 1000.0 Elapsed Pumping Time (Min.) City of Eagle Aquifer Test 100.0 10.0 Pumping Off 6/9/06 10:00 am Elapsed pumping time = 0.0 min. 0.1 0.0 2.0 1.0 4.0 3.0 7.0 6.0 5.0 8.0 10.0 9.0 Water Level Recovery (ft.)

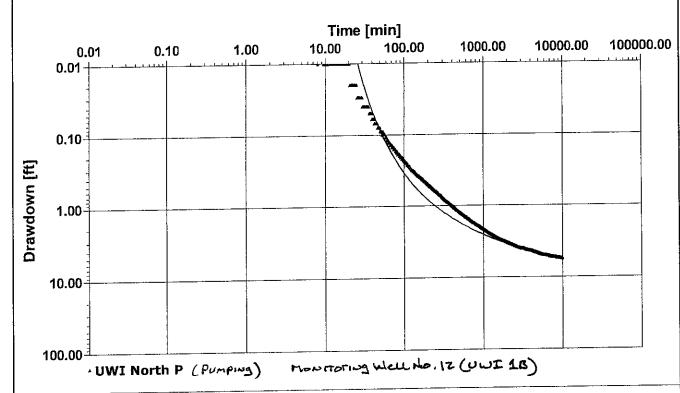
Monitoring Well No. 12 (UWI 1B North)

Recovery Semi-log Plot



Pumping Test Analysis Report			
Project: Eagle Aquifer Test			
Number:	···		
Client:			

Location:	Pumping Test: Drawdown	Pumping well: Test Well No 2 P
Test conducted by:		Test date: 6/30/2006
Analysis performed by:	New analysis 1	Date: 6/30/2006
Agulfer Thickness: 100.00 ft	Discharge rate: 1580 [U.S. gal/min]	

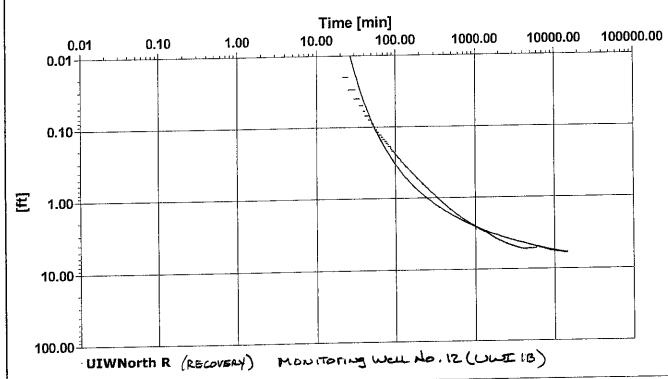


Calculation after Theis		•			
Observation well	Transmissivity	К	Storage coefficient	Radial distance to PW	
	[ft²/d]	[ft/d]		[ft]	
UWI North P	1.80 × 10 <sup>4</sup>	1.80 × 10 <sup>2</sup>	7.90 × 10 <sup>-4</sup>	2405.68	
011111011111					



Pumping Test Analysis Report				
Project: Recovery Eagle Aquifer Test				
Number:				
Client:				

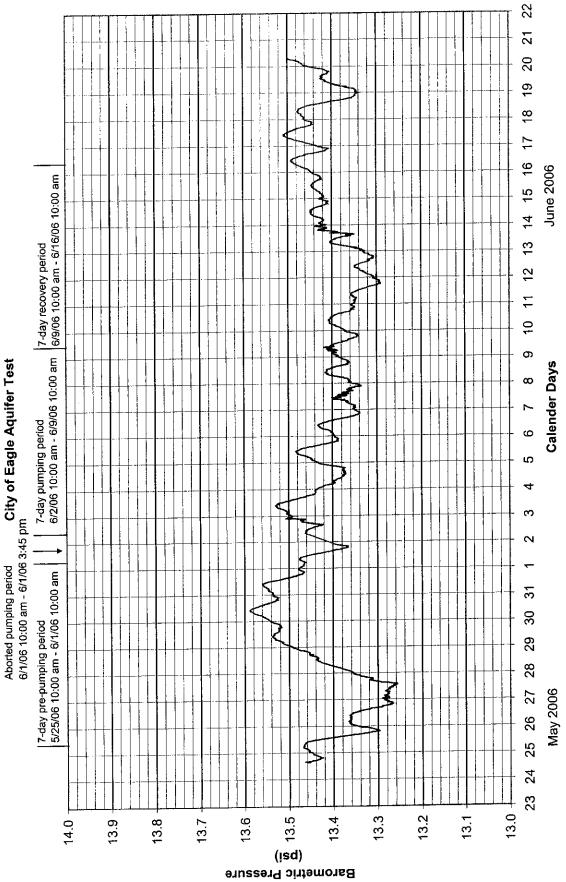
接接排除排列		
Location:	Pumping Test: Recovery Eagle Aquifer Test	Pumping well: TestwellNo2 R
Test conducted by:		Test date: 6/30/2006
Analysis performed by:	recovery	Date: 6/30/2006
Agulfer Thickness: 100.00 ft	Discharge rate: 1580 [U.S. gal/min]	



				<del></del>	
Calculation after Theis				T	
Observation well	Transmissivity	K	Storage coefficient	Radial distance to PW	
	[ft²/d]	[ft/d]		[ft]	
		1.80 × 10 <sup>2</sup>	8.00 × 10 <sup>-4</sup>	2405.68	
UIWNorth R	1.80 × 10 <sup>4</sup>	1.00 % 10			

BAROMETER

Barometric Presures Monitoring
Located at Test Well No. 2 (Eaglefield)



## **APPENDIX D**

MONITORING WELL SURVEY DATA



#### HOLLADAY ENGINEERING COMPANY

32 N. MAIN PAYETTE, ID 83661 (208) 642-3304 FAX (208)642-2159 email: hec@holladayengineering.com

#### MONITORING WELLS

 OWNER : CITY OF EAGLE
 DATE: 6/27/06

 PROJECT : MONITORING WELL ELEVATIONS
 PROJECT : EG061204

 AREA : T.4N., R.1W., S. 11
 PAGE:

#### COORDINATES:

SURVEY PT. NO.	WELL	NORTHING	EASTING	LATITUDE	LONGITUDE	ELLIP.
1001	MW4	744362.8	2441586.0	43° 42' 24.54111" N	116° 26' 37.01283" W	2445.52
1002	MW6	744588.6	2446816.4	43° 42' 27,19661" N	116° 25' 25.84087" W	2469.58
1006	MW7	744008.1	2447329.0	43° 42' 21.50594" N	116° 25' 18.79939" W	2464.49
1010	MW9	743615.2	2445294.5	43° 42' 16.44486" N	116° 25' 58.13148" W	2454.54
1011	MW10	743595.6	2445295.1	43° 42′ 16.45073″ N	116° 25' 57.67684" W	2454.22
1012	MW11	739778.3	2448944.4	43° 41' 39.86635" N	116" 24' 56.34880" W	2462.67
1015	MW12	739778.3	2448944.4	43° 41' 39,86635" N	116° 24' 56.34880" W	2462.67
1013	TW1	742602.3	2446166.4	43° 42' 07.53036" N	116° 25' 34.46777' W	2456.70
1007	TW2	741256.3	2447040.0	43° 41' 54.30943" N	116° 25' 22,42992" W	2457.89

### ELEVATIONS: GROUND ELEVATIONS (NOT TOP CASING ELEVATIONS)

WELL	ELEVATION	DESC.	
MW4	2501.86	(N) HUB	
MW6	2525.84	(E) HUB	
MW7	2520.74	(NW) HUB	
MW9	2510.83	(N) HUB	
MW10	2510.52	(N) HUB	
MW11	2518.83	EAST (N) RIM	
MW12	2518.83	EAST (N) RIM	
TW1	2512.97	(N) HUB	
TW2	2514.15	-	

#### GENERAL NOTES:

VERTICAL:

NAVD88 - BASED ON MEASURED ELLIPSOID HEIGHT AND

CALCULATED GEOID SEPARATION (GEOID 03).

HORIZONTAL:

IDAHO STATE PLANE GRID (IDAHO WEST ZONE - NAD83) -

GROUND DISTANCES SHOWN

USING AVERAGE COMBINED FACTOR OF 0.99986746067 TO CONVERT GRID TO GROUND DISTANCES